GUIDELINES

For

GENERAL PRACTITIONERS

2024

Press record

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FOREWORD

It is a great honor for me to write a foreword to Guidelines for General Practitioners by General Practitioners' society, Myanmar Medical Association (Central).

General practitioners are the primary health providers in the community looking after the majority of the people of our country. They are being trusted and depend upon by every families in the surrounding area where they practice. The first and foremost care by the General Practitioners are the most important for all the people.

Guidelines based on a critical appraisal of scientific evidence (evidence-based guidelines) clarify which interventions are of proved benefit and document the quality of the supporting data. They alert clinicians to interventions unsupported by good science, reinforce the importance and methods of critical appraisal, and call attention to ineffective, dangerous, and wasteful practices.

Clinical guidelines can improve the quality of clinical decisions. They offer explicit recommendations for clinicians who are uncertain about how to proceed, overturn the beliefs of doctors accustomed to outdated practices, improve the consistency of care, and provide authoritative recommendations that reassure practitioners about the appropriateness of their treatment policies.

The Myanmar Medical Association together with the GP society has been helping out with the CME and CPD program for the Member doctors both inhouse sessions and online courses. This guideline is one of the essential parts of this CPD for the GPs.

I would like to congratulate the GP society for their effort for producing this guideline and also, I would like to encourage them to review and updated regularly.

Professor Aye Aung
President
Myanmar Medical Association

April, 2024

PREFACE

We are writing this letter to express our sincerest gratitude and appreciation for the successful completion of the **second edition** of the **General Practitioners' Guidelines**. This accomplishment is the result of an exceptional collaborative effort, and we would like to extend our thanks to all those involved.

The General Practitioners' Guidelines has been an invaluable resource since its inception with the launch of the first edition in November 2017. As per the initial plan, the guidelines were intended to be updated every three years to ensure the most up-to-date information reaches Myanmar General Practitioners, enhancing their knowledge in primary healthcare and family health.

However, the unforeseen outbreak of the Covid-19 pandemic disrupted our plans and posed numerous challenges for the team. In-person meetings became impossible due to safety concerns, making it necessary for us to find alternative means of communication and collaboration. Despite the adversity faced, the team members demonstrated remarkable resilience and adaptability by utilizing online platforms and technology to continue the update process.

We would like to extend our deepest gratitude to the dedicated team members who persevered and worked tirelessly during these trying times. Their commitment, professionalism, and unwavering dedication to the project enabled us to overcome the obstacles posed by the pandemic and successfully complete the second edition of the guideline.

Furthermore, we would like to express our sincere appreciation to the specialist societies that actively contributed to the development of the guidelines. Their expertise and invaluable insights have ensured that the content remains current, accurate, and relevant, enabling our General Practitioners to provide the highest quality of care to their patients.

We would also like to extend our heartfelt thanks to the esteemed President of the Myanmar Medical Association, for their continuous support and guidance throughout this endeavor. Their leadership and unwavering commitment to advancing medical knowledge in Myanmar have been instrumental in the success of this Guidelines.

Moreover, the decision to distribute the guideline as electronic copies reflects our commitment to ensuring easy access for all Myanmar General Practitioners. By making it available in this format, we aim to facilitate the dissemination of updated knowledge, thus empowering our healthcare professionals to deliver the best possible care to the community.

In conclusion, we would like to express our deepest gratitude to all those who contributed to the development and distribution of the General Practitioners' Guidelines Second Edition. The unwavering supports and collective efforts have made a significant impact on enhancing primary healthcare and family health care in Myanmar.

Once again, thank you for your outstanding dedication, resilience, and invaluable contributions. We look forward to our continued collaboration in advancing medical knowledge and improving healthcare outcomes for all.

Dr Khine Soe Win and Dr Win Zaw April, 2024
General Practitioners' Society (Central)
Myanmar Medical Association

EDITORIAL

It is my privilege to inform you that our updated and revised edition of "**Guidelines for General Practitioners**" will be published very soon and it is my great pleasure to be the editor-in-chief of this guideline book. There are various reasons for revising and updating the previous edition.

This is the fact that some important topics, for example, malaria and family violence are missing in the first edition and some clinical practice guidelines like Diabetes Management have been changed during the interim period. Of course, this opportunity arises due to the emergence of COVID-19 in the world. As all you know, Medicine is an ever-changing science; we need to consider updating our guidelines at least five- yearly. Hence the time is up now!

Education is achieved by assimilating information from many resources and readers of this book can enhance their learning experience in terms of reflecting in their daily Family/General Practice. We all take immerse pride in contributing good educational resource dedicated to Myanmar General Practitioners. The editors and authors anticipate that the readers will both enjoy and profit from their work in preparing this volume.

Happy studying and learning,

Dr Win Lwin Thein
Editor-in chief
Vice President (GP Society)
April, 2024

ACKNOWLEDGEMENT

We would like to thank all our talented and hard-working colleagues who have contributed to the ongoing development of the **Guidelines for General Practitioners**.

Especially, we would like to highlight the significance of the second edition which appears when the family medicine development process in Myanmar is being idle. Many factors are impeding the developing process lately, which has been accelerated previously by the commitment of the MOHS, the medical universities, and the General Practitioners' Society before the COVID-19 pandemic started.

No one can deny that the Myanmar health care system is lacking a strong and effective primary care task force. The best solution to mend this defect is retraining the thousands of general practitioners who are working individually across the country. Here comes the role of family medicine to train these GPs and primary care doctors to be able to use its principles effectively and, in turn, strengthen primary care.

Many GPs are using some family medicine principles consciously or unconsciously in varying degree of competency. Person-centered care, continuity of care, and family-oriented care became the culture of most practices for a long time. But only a few GPs can enjoy the most effective coordinated care and seamless continuity of care with secondary and tertiary care providers. The reasons behind this would be the absence of standardization in general practitioners' service quality and unawareness of the value of family medicine practitioners by other specialties and the public.

To resolve this ambiguity, primary care doctors should be involved in the retraining programs and thereafter CME/CPD and other life-long-learning programs which prescribe family medicine curricula.

We also acknowledge the effort of the contributors to make this new edition more family medicine-oriented, in addition to the Family Medicine chapter at the beginning of the book. We genuinely believe that the new edition will be a better reference for the GP/FP who wants to practice quality primary care and for future family medicine programs in Myanmar.

Finally, we would like to thank all academic writers who contributed to the General Practice Guidelines-first edition. Without their kind support, this second edition could never have happened.

Regards,

Dr. Tin Aye and Dr. Kyaw Thu

General Practitioners' Society (Central), MMA **April, 2024**

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SYMBOLS AND ABBREVIATIONS

AAA abdominal aortic aneurysm
ABC airway, breathing, circulation
ABCD airway, breathing, circulation, dextrose
ABO A, B and O blood groups
ACE angiotensin-converting enzyme
ACEI angiotensin-converting enzyme inhibitor
ACTH adrenocorticotrophic hormone
ADHD attention deficit hyperactivity disorder
ADT adult diphtheria vaccine
AFP alpha-fetoprotein
AI aortic incompetence
AIDS acquired immunodeficiency syndrome
AIIRA angiotensin II (2) reuptake antagonist
AKF acute kidney failure
ALE average life expectancy
ALL acute lymphocytic leukaemia
ALP alkaline phosphatase
ALT alanine aminotransferase
AMI acute myocardial infarction
AML acute myeloid leukaemia
ANA antinuclear antibody
ANF antinuclear factor
AP anterior–posterior
APH ante-partum haemorrhage
ASD atrial septal defect
ASIS anterior superior iliac spine
ASOT antistreptolysin O titre
AST aspartate aminotransferase
AV atrioventricular
AZT azidothymidine
BCC basal cell carcinoma
BCG bacille Calmette-Guérin
BMD bone mass density
BMI body mass index
BP blood pressure
BPH benign prostatic hyperplasia
Ca carcinoma
CABG coronary artery bypass grafting
CAD coronary artery disease
CAP community acquired pneumonia
CBT cognitive behaviour therapy
CCF congestive cardiac failure
CCU coronary care unit
CD4 T helper cell
CD8 T suppressor cell
CDT combined diphtheria/tetanus vaccine
CEA carcinoembryonic antigen
CFS chronic fatigue syndrome
CHD coronary heart disease
CHF chronic heart failure
CIN cervical intraepithelial neoplasia
CK creatinine kinase
CKD chronic kidney disease
CKF chronic kidney failure
CML chronic myeloid leukaemia
CMV cytomegalovirus
CNS central nervous system
COAD chronic obstructive airways disease
COC combined oral contraceptive
COCP combined oral contraceptive pill
COPD chronic obstructive pulmonary disease
COX cyclooxygenase
CPA cardiopulmonary arrest
CPAP continuous positive airways pressure
CPK creatine phosphokinase
CPR cardiopulmonary resuscitation
CR controlled release
CREST calcinosis cutis; Raynaud's phenomenon; oesophageal involvement; sclerodactyly; telangiectasia
CRF chronic renal failure
CR(K)F chronic renal (kidney) failure
CRP C-reactive protein
CSF cerebrospinal fluid
CT computerised tomography
CTS carpal tunnel syndrome
CVA cerebrovascular accident
CVS cardiovascular system
CXR chest X-ray
DBP diastolic blood pressure
DC direct current
DHA docosahexaenoic acid
DI diabetes insipidus
DIC disseminated intravascular coagulation
dL decilitre
DMARDs disease modifying antirheumatic drugs
DNA deoxyribose-nucleic acid
DRABC defibrillation, resuscitation, airway, breathing, circulation
drug dosage bd—twice daily, tid/tds -three times daily, qid/qds -four times daily
ds double strand
DS double strength
DSM diagnostic and statistical manual (of mental disorders)
DU duodenal ulcer
DUB dysfunctional uterine bleeding
DVT deep venous thrombosis
EBM Epstein-Barr mononucleosis (glandular fever)
EBV Epstein-Barr virus
ECG electrocardiogram
ECT electroconvulsive therapy
EDD expected due date
EEG electroencephalogram
ELISA enzyme linked immunosorbent assay
ESRF end-stage renal failure
ESR(K)F end stage renal (kidney) failure
ERCP endoscopic retrograde cholangiopancreatography
esp. especially
ESR erythrocyte sedimentation rate
FB foreign body
FBE full blood count

FEV1 forced expiratory volume in 1 second
fL femtolitre = (1e–15) litre
FSH follicle stimulating hormone
FUO fever of undetermined origin
FVC forced vital capacity
g gram
GA general anaesthetic
GABHS group A beta-haemolytic streptococcus
GBS Guillain-Barré syndrome
GFR glomerular filtration rate
GI glycaemic index
GIT gastrointestinal tract
GLP glucagon-like peptide
GnRH gonadotrophin-releasing hormone
GO gastro-oesophageal
GORD gastro-oesophageal refl ux
GP general practitioner
G-6-PD glucose-6-phosphate
GU gastric ulcer
HAV hepatitis A virus
anti-HAV hepatitis A antibody
Hb haemoglobin
HbA haemoglobin A
anti-HBc hepatitis B core antibody
HBeAg hepatitis B e antigen
anti-HBs hepatitis B surface antibody
HBsAg hepatitis B surface antigen
HBV hepatitis B virus
HCG human chorionic gonadotropin
HCV hepatitis C virus
anti-HCV hepatitis C virus antibody
HDL high-density lipoprotein
HEV hepatitis E virus
HFM hand, foot and mouth
HFV hepatitis F virus
HGV hepatitis G virus
HIV human immunodeficiency virus
HNPCC hereditary nonpolyposis colorectal cancer
HPV human papilloma virus
HRT hormone replacement therapy
HSV herpes simplex viral infection
IBS irritable bowel syndrome
ICE ice, compression, elevation
ICS inhaled corticosteroid
ICS intercondylar separation
ICT immunochromatographic test
IDDM insulin dependent diabetes mellitus
IDU injecting drug user
IgE immunoglobulin E
IgG immunoglobulin G
IgM immunoglobulin M
IHD ischaemic heart disease
IM, IMI intramuscular injection
inc. including
IPPV intermittent positive pressure variation
IR internal rotation
ITP idiopathic (or immune) thrombocytopenia purpura
IUCD intrauterine contraceptive device
IUGR intrauterine growth retardation
IV intravenous
IVI intravenous injection
IVP intravenous pyelogram
IVU intravenous urogram
JCA juvenile chronic arthritis
JVP jugular venous pulse
KA keratoacanthoma
kg kilogram
KOH potassium hydroxide
LA local anaesthetic
LABA long acting beta agonist
LBBB left branch bundle block
LBO large bowel obstruction
LBP low back pain
LDH/LH lactic dehydrogenase
LDL low-density lipoprotein
LFTs liver function tests
LH luteinising hormone
LHRH luteinising hormone releasing hormone
LIF left iliac fossa
LMN lower motor neurone
LNG levonorgestrel
LRTI lower respiratory tract infection
LSD lysergic acid
LUQ left upper quadrant
LUTS lower urinary tract symptoms
LV left ventricular
LVH left ventricular hypertrophy
mane in morning
MAOI monoamine oxidase inhibitor
mcg microgram (also µg)
MCV mean corpuscular volume
MDI metered dose inhaler
MDR multi-drug resistant TB
MI myocardial infarction
MRCP magnetic resonance cholangiography
MRI magnetic resonance imaging
MS multiple sclerosis
MSM men who have sex with men
MSU midstream urine
N normal
NAD no abnormality detected
NGU non-gonococcal urethritis
NHL non-Hodgkin's lymphoma
NIDDM non-insulin dependent diabetes mellitus
nocte at night
NSAIDs non-steroidal anti-inflammatory drugs
NSU non-specific urethritis
(o) taken orally
OA osteoarthritis
OCP oral contraceptive pill
OGTT oral glucose tolerance test
OSA obstructive sleep apnoea
OTC over the counter
PA posterior–anterior
PAN polyarteritis nodosa
Pap Papanicolaou
pc after meals
PCA percutaneous continuous analgesia
PCB post coital bleeding

PCL posterior cruciate ligament
PCOS polycystic ovarian syndrome
PCP pneumocystis carinii pneumonia
PCR polymerase chain reaction
PCV packed cell volume
PDA patent ductus arteriosus
PEF peak expiratory flow
PEFR peak expiratory flow rate
PET pre-eclamptic toxaemia
PFT pulmonary function test
PH past history
PID pelvic inflammatory disease
PLISSIT permission: limited information: specific suggestion: intensive therapy
PMS premenstrual syndrome
PMT premenstrual tension
POP plaster of Paris
POP progestogen-only pill
PPI proton-pump inhibitor
PPROM preterm premature rupture of membranes
PR per rectum
prn as and when needed
PROM premature rupture of membranes
PSA prostate specific antigen
PSIS posterior superior iliac spine
PSVT paroxysmal supraventricular tachycardia
PT prothrombin time
PTC percutaneous transhepatic cholangiography
PU peptic ulcer
PUO pyrexia of undetermined origin
pv per vagina
qds, qid four times daily
RA rheumatoid arthritis
RBBB right branch bundle block
RBC red blood cell
RCT randomised controlled trial
RF rheumatic fever
Rh rhesus
RIB rest in bed
RICE rest, ice, compression, elevation
RIF right iliac fossa
RPR rapid plasma reagin
RR relative risk
RSV respiratory syncytial virus
RT reverse transcriptase
rtPA recombinant tissue plasminogen activator
SAH subarachnoid haemorrhage
SARS severe acute respiratory distress syndrome
SBE subacute bacterial endocarditis
SBO small bowel obstruction
SBP systolic blood pressure
SC/SCI subcutaneous/subcutaneous injection
SCC squamous cell carcinoma
SCG sodium cromoglycate
SIADH syndrome of secretion of inappropriate antidiuretic hormone
SIDS sudden infant death syndrome
SIJ sacroiliac joint
SL sublingual
SLE systemic lupus erythematosus
SLR straight leg raising
SND sensorineural deafness
SNHL sensorineural hearing loss
SNRI serotonin noradrenaline reuptake inhibitor
SOB shortness of breath
sp species
SR sustained release
SSRI selective serotonin reuptake inhibitor
SSS sick sinus syndrome
stat at once
STI sexually transmitted infection
SVC superior vena cava
SVT supraventricular tachycardia
T3 tri-iodothyronine
T4 thyroxine
TB tuberculosis
tds, tid three times daily
TENS transcutaneous electrical nerve stimulation
TFTs thyroid function tests
TG triglyceride
TIA transient ischaemic attack
TIBC total iron binding capacity
TM tympanic membrane
TMJ temporomandibular joint
TNF tissue necrosis factor
TOF tracheo-oesophageal fistula
TORCH toxoplasmosis, rubella, cytomegalovirus, herpes virus
TPHA Treponema pallidum haemoglutination test
TSE testicular self-examination
TSH thyroid-stimulating hormone
TT thrombin time
TV tidal volume
U units
UC ulcerative colitis
U & E urea and electrolytes
µg microgram
UMN upper motor neurone
URTI upper respiratory tract infection
US ultrasound
UTI urinary tract infection
U ultraviolet
VC vital capacity
VDRL Venereal Disease Reference Laboratory
VF ventricular fibrillation
VMA vanillyl mandelic acid
VSD ventricular septal defect
VT ventricular tachycardia
VUR vesico-ureteric reflux
VWD von Willebrand's disease
WBC white blood cells
WCC white cell count
WHO World Health Organization
WPW Wolff-Parkinson-White
XL sex linked

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OBSTETRICS AND GYNAECOLOGY

Antenatal Care
Prescribing Medications in Pregnancy
Minor Problems of Pregnancy and Management
Other common minor disorders
Hyperemesis Gravidarum
Abnormal Uterine Bleeding
Antepartum Haemorrhage
Bleeding in Early Pregnancy
Medical Diseases in Pregnancy
Abnormal Puerperium
Post-Natal Care
Contraception
Infertility
Premenstrual Syndrome
Menopause
Vaginal Discharge
Itchy Vulva (Pruritus Vulvae)
Cervical Cancer

ANTENATAL CARE

Introduction

There are three main purposes to antenatal care:

- health promotion,
- preparation for labour and parenthood and
- surveillance of risks.

Objective

- To conduct routine antenatal care in standard guidelines for every pregnant woman

Responsible care-giver

- All General Practitioners

First visit or booking visit:

Antenatal history on booking visit to detect risk factors that may indicate referral to specialist centre for joint care above that provided to low risk women. AN history summary (Annex 1)

History

- Complete history: to identify risk factors
- Menstrual History:
- LMP, EDD and Gestation.

Examination

General examination

- Measure body weight in kilogram and height in meter to calculate **BMI** (BMI=Kg/m^2) if woman is in first trimester (BMI=Kg/m^2)
- Perform a thorough physical examination to detect medical diseases including anemia.
- Measure **BP,** Look for pallor, **pedal oedema**

Obstetric examination

- To confirm pregnancy, its maturity
- Fundal height, Measure symphysial fundal height (SFH) in cm after 20 weeks
- Number of fetus, lie, presentation, and listen FHS by Pinard fetal stethoscope or Doppler

Pretest counseling

- PMCT- HIV in group and individual if the woman requests

Arrange for antenatal investigations

- Blood grouping and Rhesus typing, Rh negative women should counsel for testing Husband's Rh typing. Referral for counseling for Anti D vaccine at 28 weeks and post-delivery or if indicated.
- Blood for CP and Platelets.
- Urinalysis – RE, Urine protein

- To do 75 g **OGTT at *24-28* weeks** if woman is potential diabetic (if available)
- HBs antigen,
- HCV antibody,
- STSNDRL.
- HIV antibody test after VCCT under PMCT program and referral to the nearest PMCT centre.
- Routine dating Scan: At booking visit to determine gestational age
    - *Detail fetal anomaly scan around 18-20 weeks*

Health education

- Counseling and give information on diet and life style consideration
- Give information on danger signs (e.g. bleeding, abdominal pain, dribbling)

Intervention

- Folic acid supplementation (400µg *I* day ideally 6 weeks pre-pregnant and up to 12 weeks of gestation)
- Injection tetanus toxoid (TT) for 2 doses with at least one month apart
- Prescribe iron when morning sickness is relieved
- Arrange **next visit** at 1 - 4 weeks depending upon gestational age
- **Refer** to Specialist Assistants/ specialist centre if the pregnancy is at high risk

Second Visit

- Review, discuss and record results of all investigations
- Post-test counseling
- Measure BP and urine protein
- Obstetric examination
- Finalize EDD by history and clinical examination, USS
- Identify abnormal findings and treat accordingly,
- If Hb <11 gm/dl, treat according to anaemia in pregnancy guideline
- UTI to be treated with Amoxil500tds for 5days/ cephalosporin 500mg tds for 5 days if no contraindication. Re-check 1week after antibiotics or change antibiotics if not responding well. Urine for C&S if facility is available before starting antibiotics
- PMCT post-test counseling, reassuring if test result is negative
- If test positive, treat according to guideline on PMCT

Subsequent Visits

- Provide routine antenatal care during follow up visits monthly till 28 weeks, every 2 weeks till 36 weeks and weekly there after
- At 28 week - offer anti D if Rh negative in non-sensitized women
- At 34 week - recheck placental localization if low-lying in previous scan
- At 36 week - check presentation and inform senior if any abnormal presentation.
- breast feeding counseling, birth plan and neonatal care
- At 40 week - To be seen by OG for counseling about complications regarding post-date. Note foetal kick count (count to 10); ask to come back if fetal movements reduce. Plan to transfer where induction procedure is feasible

Woman with risk factors who may need refer to specialist centre

Risk factors

- Present pregnancy
    - Associated medical diseases (joint care) including who need PMCT (when there is

positive HIV screening)
    - Extreme of age under 18/over 40 years; BMI >35 or <18.
    - Discrepancy between maturity by USG report, uterine size and by LMP
- Antenatal complications –
    - Gestational hypertension,
    - PE,
    - abnormal lie/presentation, twins, APH placenta previa
- Previous History of
    - Maternal complication such as Previous PE or eclampsia.
    - Previous caesarean section or any uterine scar (myomectomy, etc.)
    - Two or more miscarriages
    - Previous psychiatric illness or puerperal psychosis
- Neonatal complication such as:
    - Previous preterm birth or mid-trimester loss.
    - Previous neonatal death or stillbirth, congenital anomalies
    - Previous small or large for gestational age
- Family history of genetic disorder

PRESCRIBING MEDICATIONS IN PREGNANCY

- Drugs can have harmful effects on embryo or fetus at any time during pregnancy.
- During the first trimester drugs can produce congenital anomalies or (teratogenesis) to the fetus especially between **third to the eleventh weeks of pregnancy.**
- During the second and third trimester drugs can affect the **growth or functional development** of the fetus and sometimes toxic effects on the skin.
- Penicillin, Ampicillin, Amoxicillin and cephalosporin are safe during pregnancy until stated otherwise.
- Quinolones should be avoided during pregnancy as they have shown to cause arthropathy in animal studies.
- Triazole antifungals should be avoided during pregnancy. Multiple congenital anomalies have been reported.

THE MINOR PROBLEMS OF PREGNANCY AND MANAGEMENT

Nausea and Vomiting in Early Pregnancy (Morning Sickness)

- Usually occurs between 6 & 14 weeks of pregnancy
- More of nausea and retching than vomiting
- Exact aetiology is not known. It may be psychological or may be due to increased HCG and estrogen levels

Treatment

- reassurance, advice frequent small meals and fluid
- avoid greasy and spicy food
- sometimes may need antiemetics (Nosic = doxylamine + B6), cyclizine 50 mg tds.
- If severe, it may lead to hyperemesis gravidarum and need referral as it may sometime need intensive care

Constipation

- Frequent complaint
- Due to the effect of progesterone in slowing gut motility, weight of gravid uterus on the rectum & concomitant use of iron preparation

Advice

- to take high fibre diet & milk, fluids, fruits and vegetable; non-stimulant laxatives such as lactulose or cream of magnesia, bulk forming laxative (ispaghula husk)

Heart Burn

- Burning in the chest or discomfort often on lying down
- Common in the third trimester but can occur earlier
- Caused by irritation of the lower end of oesophagus by gastric contents
- Due to relaxation of oesophageal sphincter

Advice

- Low-fat, bland food, small and frequent meals,
- Avoidance of lying supine or bending, eating late, caffeine.
- Liquid antacid preparations,
- Stop smoking & reduce alcohol intake,
- Severe refractory dyspeptic symptoms may warrant GI referral.

Oedema

- Oedema of some degree 1s common during pregnancy due to increased capillary permeability

Advice

- frequent periods of rest with elevation of legs over a pillow, occasionally may need support stocking, Removal of rings if fingers are excessively swollen
- If it is marked, need to check BP & urine for protein to exclude preeclamsia, and also need to exclude

underlying cardiac impairment, nephrotic syndrome or severe by hypoproteinaemia

Varicose Veins & Piles

- They become worse in later part of the pregnancy
- Due to the relaxant action of progesterone on the vascular smooth muscle
- Varicose vein of legs
    - Dependent venous stasis due to weight of the uterus on Inferior vena cava.
    - Avoid prolong standing
    - Symptomatically improved by support stocking
- Piles
    - Advice to take high fibre diet & avoid constipation
    - Local anaesthetic or ice packs can be given
- Varicose vein of vulva and vagina
    - Uncommon but sometimes troublesome bleeding may occur if superficial veins are traumatised at the time of delivery (episiotomy, tears)

Pruritus Vulvae & Vaginal Discharge

- **Vaginal candidiasis** - curdled milk like discharge per vagina with pruritus
    - ***Treatment:*** oral antifungal are not advisable during pregnancy, clotrimazole cream or vaginal tablets
- **Trichomoniasis** - yellowish or greenish frothy discharge with pruritus
    - ***Treatment:*** metronidazole ***after first trimester***

Acroparethesia

- **Tingling** & numbness of the fingers due to compression of the median nerve by soft tissue swelling in the Carpal tunnel
    - ***Treatment:*** splinting of the affected hand, cure after delivery, steroid injection

Backache & Sacroiliac Pain

- Due to slackening of ligaments & lumber lordosis of pregnancy

Treatment

- rest, maintenance of correct posture, avoid high heels
- avoid lifting heavy objects
- regular physiotherapy
- simple analgesia

OTHER COMMON MINOR DISORDERS

- headache,
- fainting,
- breast soreness,
- tiredness,
- nose-bleed, leg cramps,
- insomnia
- striae gravidarum,
- chloasma & itchiness.
-

HYPEREMESIS GRAVIDARUM

- Excessive vomiting during pregnancy
- May occur in molar pregnancy & multiple pregnancy
- In very severe cases
    - starvation, dehydration, ketosis, hypotension, oliguria vitamin B deficiency & neurological disorders
- Mallory - Weiss syndrome - tearing of the mucosa of lower end of oesophagus with bleeding from the small vessels leading to haematemesis
- It is important to exclude other causes of vomiting like pyelonephritis, hydatidiform mole, intestinal obstruction & hepatitis

Management

- **Admission to hospital** is mandatory
- Antiemetics like metoclopramide or prochlorperazine as regular basis
- Intravenous hydration support with vitamin B6 and B complex including Thiamine
- Monitor intake & output
- Oral feeding as soon as possible, then semisolid and later full diet

Reference

1. *Obstetrics and Gynaecology Mangement Guidelines, F' Edition (2015), O&G Society, MMA*
2. *Oxford handbook of General Practice, 4''' Edition*

ABNORMAL UTERINE BLEEDING

MENORRHOGIA

Menorrhagia (heavy menstrual bleeding) is defined as *excessive cyclical menstrual blood loss* which interferes with the woman's physical, emotional, social and material quality of life over several consecutive cycles in an otherwise normal menstrual cycle.

INTERMENSTRUAL BLEEDING

- It is defined as bleeding from the vagina *at any* **time** in the menstrual cycle other than normal menstruation.

POST-MENOPAUSAL BLEEDING (PMB)

- Bleeding from the vagina *12 months* after the **last period.**
- Any PMB should be assumed to be to endometrial carcinoma until proved otherwise and **refer to OG for further assessment.**

DYSFUNCTIONAL UTERINE HAEMORRHAGE (DUH)

- It is defined as the occurrence of **irregular** or *excessive uterine bleeding in the absence* of pregnancy, infection, trauma, new growth or hormone treatment.
    - **Oligomenorrhea:** menstruation occurring with intervals of *more than 35 days*
    - **Polymenorrhea:** menstruation occurring regularly with intervals of *less than 21 days*
    - **Metrorrhagia:** menstrual bleeding occurring *at irregular* intervals or bleeding between menstrual cycles
    - **Menorrhagia:** regular menstrual cycles with excessive flow (technically more than 80mL of volume) or menstruation lasting more than 7 days
    - **Menometrorrhagia:** menstrual bleeding occurring *at irregular* intervals with excessive flow or duration
    - **Abnormal Menstrual cycles:** that are longer than 35 days or shorter than 21 days

Causes of abnormal uterine bleeding

Menorrhagia	Intermenstrual bleeding	PMB	Post coital bleeding
• Pelvic endometriosis • Fibroid* • PID* • Endometrial hyperplasia* • Hyperthyroid • Clotting Disorder • Iatrogenic -IUCD • Poor control anticoagulant	Anovulatory bleeding Cervix ectropian Low grade infection Ca cervix Polyp IUCD **COC** Depo injection	Exogenous estrogen Atrophic endometritis Ca endometrium Hyperplasia Ca cervix Polyp Ovarian oestrogen secreting tumour	Ca cervix Cervical polyp

History

- **Age**
    - teenage, perimenopause, post menopause, old age

- **Type of bleeding**
  - (Menorrhagia, Metrorrhagia, Metromenorrhagia, Oligomenorrhoea)
  - severity, associated pelvic pain or dysmenorrhoea
  - previous similar episode, vaginal discharge
  - recent unexplained weight loss, loss of appetite
  - signs and symptoms suggestive of anaemia as well as thyroid dysfunction
- **Family history-**
  - family history of uterine fibroid, Ca, endometriosis, bleeding disorders
- **O&G history-**
  - multiparous, nulliparous, h/o abortion, D & C, surgery, pap smear, PID,
- **Menstrual history**
  - irregularity, spotting or breakthrough bleeding
- **Drugs history**
  - OC pills, IUCD, Hormone Replacement Therapy (HRT), antiepileptic, anticoagulant, tamoxifen
  - h/o others comorbid disease - DM, Hypertension

Examination

- Look for signs of anaemia
- Abdominal examination: any palpable mass, tenderness, guarding (in post abortion)
- VE: Assessment of uterine size and consistency (only if it is necessary), bimanual examination,
- Speculum examination (except in virgin): to visualize the cervix, to detect any abnormality (e.g. Ca Cx, polyp, ectopy)
- Pap smear: (if there is facilities, provided no active bleeding PV) or refer for pap smear

Investigation

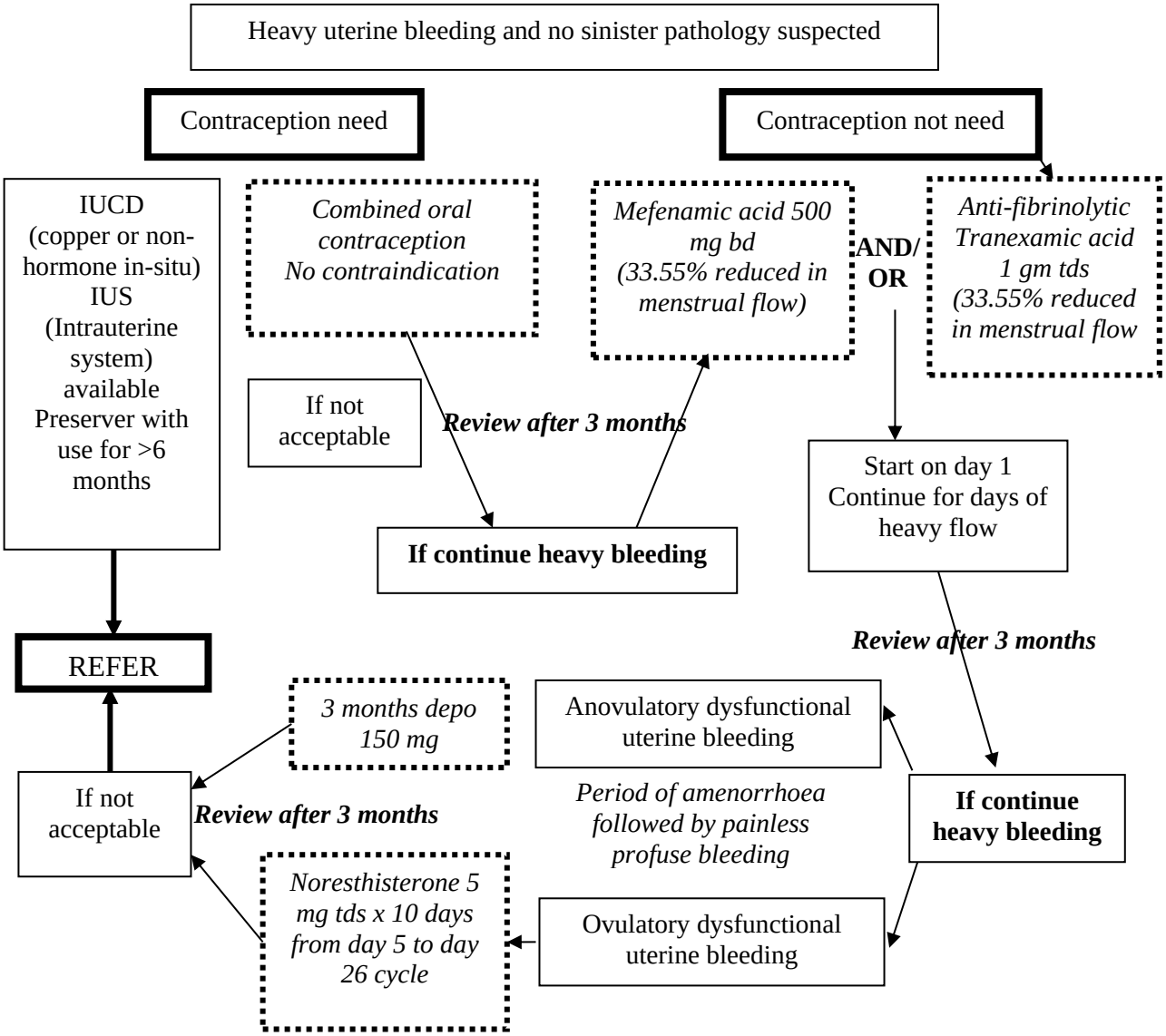
- test for HCG to exclude pregnancy (complications) even in single after counselling
- Complete Blood Count to assess Anaemia in case of Heavy menstrual bleeding (HMB), Intermenstrual bleeding (IMB)
- Thyroid function test (TFT) only if symptom & sign suggestive of hyper or hypothyroid
- Pelvic USG or Transvaginal USG if structural abnormality is suspected
- Bleeding time, clotting time if bleeding disorders suspected

Treatment

- HMB (menorrhagia) without structural abnormality DUB treatment

DUH treatment

Fig 1. Medical management of menorrhagia in primary care



ENDOMETRIOSIS

Symptoms:

- Pelvic pain: cyclical + - non-cyclical, dyspareunia, dysmenorrhoea (spasmodic dysmenorrhoea is highly predictive of endometriosis), dyschezia (pain defecation)
- Menorrhagia
- Infertility

Sign on VE:

- tender uterosacral ligaments or enlarged ovaries or normal finding
- palpable deeply infiltrated nodules on the US ligaments or POD or
- visible lesions on vagina or cervix especially during menstruation (VE during menstruation favours detection)
- for definite diagnosis ***Refer to OG***

Treatment:

- Empirical treatment without definite diagnosis
- Counselling,
- adequate analgesic
- progesterone or COC pills (Medroxyprogesterone 10 tds/day for 9 days) or Depo inj: *(to remember that NSAIDs have side effect including anti-ovulatory effect when taken at mid-cycle and suppression of ovarian function for 6 months with hormonal drugs reduce endometriosis associated pain)*

ADENOMYOSIS

- usually multiparous, premenopausal, woman age >35 years
- may be asymptomatic, Dysmenorrhoea (pain peak towards the end of menstruation, dyspareunia, menorrhagia,
- Pelvic examination 7 Uterus may be enlarged symmetrically
- **Refer to OG** for further investigation and management

INTERMENSTRUAL BLEEDING CERVICAL ECTOPY

- spontaneous bleeding or post coital bleeding, vaginal discharge, teenage, during pregnancy or women with OC pills
- VE- red ring around the os
- ***Refer to OG***

CA CERVIX OR POLYPS

- post coital bleeding, discharge, dyspareunia, intermenstrual bleeding
- ***Refer to OG***

IUCD

- may act as irritant
- Refer for removal or further option of treatment

DUB

- especially just after menarche and perimenopausal women
- may be Anovulatory Uterine bleeding
- see treatment guideline

BREAK THROUGH BLEEDING

- with low dose OCP or and contraceptive pills
- Treatment
    - take 2 pills on the day when the breakthrough bleeding is occurring or
    - change to stronger pill preparation
    - Obesity, cigarette smoking
    - counselling, reassurance
    - NSAID or
    - COCPs or Norethisterone 15 mg daily from days 5 to 26 of the mens cycle or
    - injected long-acting progesterone

PMB

- Risk of endometrial Ca if history of taking Tamoxifen, Unopposed oestrogen T, Polycystic ovarian syndrome and obesity
- Investigation: USG - if endometrial thickness less than 5 mm (?Atrophic vaginitis)
- observe or give conservative treatment
- Pap smear (if available)- (except in virgin) or refer for pap smear

USG finding

- If endometrium thickness on USG in Postmenopausal woman >5 mm → refer to OG
- Endometrial polyp, fibroid more than 5 cm → refer to OG
- Endometrial thickness in reproductive woman varies with cycle and the maximum thickness is 14 mm.
- If endometrial thickness >14 mm → refer to OG (likely to be after post abortion without taking proper treatment like E&C) post-abortal problem, PID

Criteria for referral to secondary care are:

- very heavy bleeding with shock, or
- anaemia secondary to heavy bleeding, or
- failure of medical treatment in women under 40 years old, or
- irregular or heavy period in a woman of any age with a structurally abnormal uterus, or
- if a woman is over 40 years old with menorrhagia of recent onset or persistent intermenstrual bleeding.
- A patient over 40 years old may require referral for irregular periods because it may be difficult to distinguish between intermenstrual and menstrual loss.
- If there is suspicion from the history of increased risk of pathology, such as carcinoma (e.g. family history or endometrial or colonic cancer, nulliparity, obesity, tamoxifen or unopposed oestrogen therapy, abnormal smear, PCOS)
- In women over 45 years with heavy menstrual bleeding.
- If there is persistent intermenstrual bleeding

Reference

1. *Obstetrics and Gynaecology Management Guidelines, 1st Edition (2015), O&G Society, MMA*
2. *Oxford handbook of General Practice, 4th Edition*

ANTEPARTUM HAEMORRHAGE

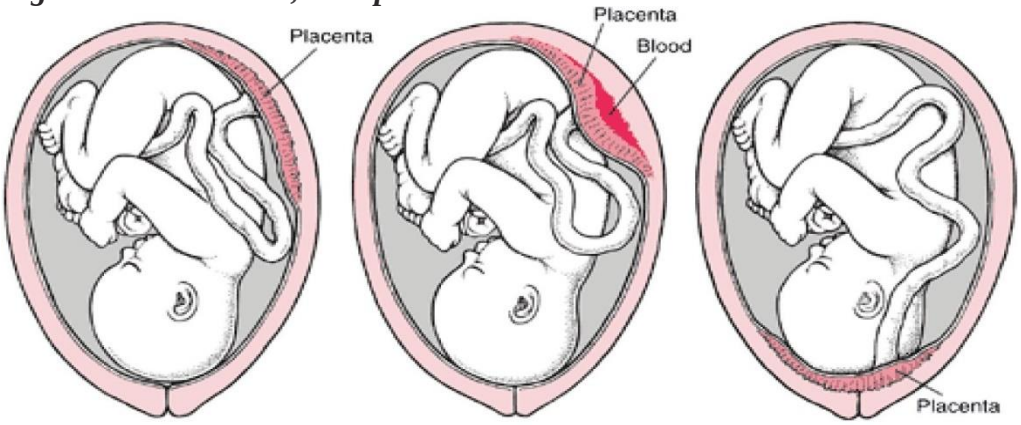
Definition

- Bleeding from the genital tract during pregnancy after 24 weeks of pregnancy before the onset of labour.

Causes

- Placental causes
  - Placenta previa
  - Abruptio placentae
  - Vasa previa
- Local Causes (Incidental causes)
  - Cervicitis, cervical erosion, cervical trauma Vaginal trauma, vaginal infection
  - Genital tract tumours - cervical carcinoma Varicosities
- Undermined causes

Fig: Normal Placenta, Abruptio Placentae and Placenta Previa



Normal Placenta Placenta Abruption Placenta Previa

PLACENTA PRAEVIA

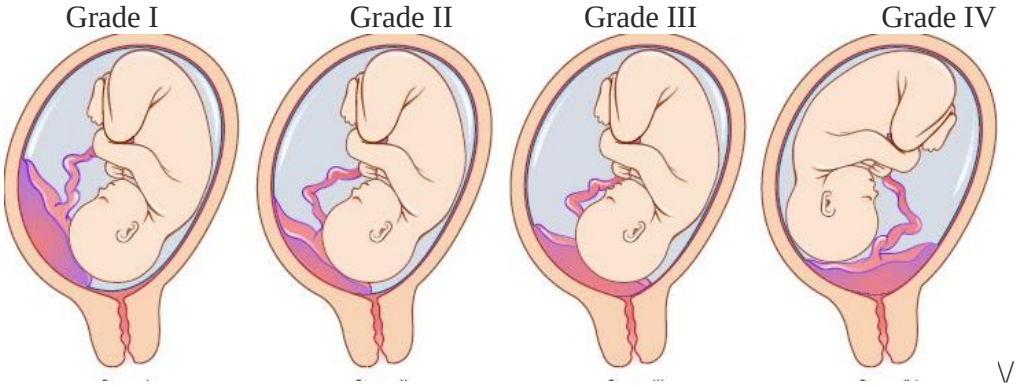
Definition

- Defined as a placenta partially or wholly situated in the lower uterine segment. It is graded in two ways, as either 1-4 or minor/major.
- Grade 1:
  - the placental edge is in the lower segment but does not reach the internal OS
- Grade 2:
  - the placental edge reaches but does not cover the internal OS
- Grade 3:
  - the placenta covers the internal OS and is asymmetrically situated
- Grade 4:
  - the placenta covers the internal OS and is centrally situated
- G 1, 2 = minor degree,
- G 3, 4, G (2) posterior = major degree

Incidence

- 0.4 - 0.8% of pregnancies

Fig: Placenta Previa Gradings



https://medicaljunkies.com/wp-content/uploads/2022/04/Placenta-previa.jpg

Aetiology

- Previous uterine surgery - Previous LSCS, curettage, myomectomy
- Maternal age - Increases with advancing maternal age
- Smoking
- Multiple gestation

Associations

- Fetal abnormality
- IUGR -because of multiple bleeds
- Co-existent abruption

Clinical features

- Painless, causeless, recurrent vaginal bleeding
- Uterus is soft
- High presenting part
- Fetal parts easily palpable
- Abnormal lie or abnormal presentation
- Satisfactory fetal condition until severe maternal condition Diagnosis confirmed by ultrasound

Management

- Immediate treatment outside the hospital
- Warning –
    - do not perform a vaginal examination
    - Restore blood volume (N/S or R/L with blood set)
- Transfer to hospital immediately

Difference between the Abruptio Placentae and Placenta Previa

Clinical Features	Placenta praevia	Abruptio placenta
Nature of bleeding	• Painless, causeless, and recurrent • Bleeding is always revealed	• Painful, often attributed to toxaemia or trauma and continuous • Revealed, concealed or usually mixed

Character of blood	• Bright red	• Dark coloured
General condition	• Proportionate to visible blood loss	• Out of proportion to the visible blood loss and anaemia in concealed type
Features of pre-eclampsia	• Not relevant	• Present in most of cases

Abdominal examination

Height of uterus	• Proportionate to gestation • Soft and relaxed	• May be disproportionately enlarged in concealed type • May be tense, tender and rigid
Malpresentation	• Malpresentation is common • The head is high floating	• Unrelated • The head may be engaged
FHS	• Usually present	• Usually absent especially in concealed type
Vaginal Examination	• Placenta is felt on the lower segment	• Placenta is not felt on lower segment. Blood clots should not be confused with placenta
Speculum Examination	• To exclude extra-placenta causes	• Speculum examination was done 3 days after bleeding is stopped
USG	• Placenta in lower segment	• Placenta is upper segment

PLACENTAL ABRUPTION (ACCIDENTAL HAEMORRHAGE)

Definition

- APH following premature separation of normally sited placenta
- The bleeding is maternal and/or fetal and abruption is acutely dangerous for both mother and fetus.

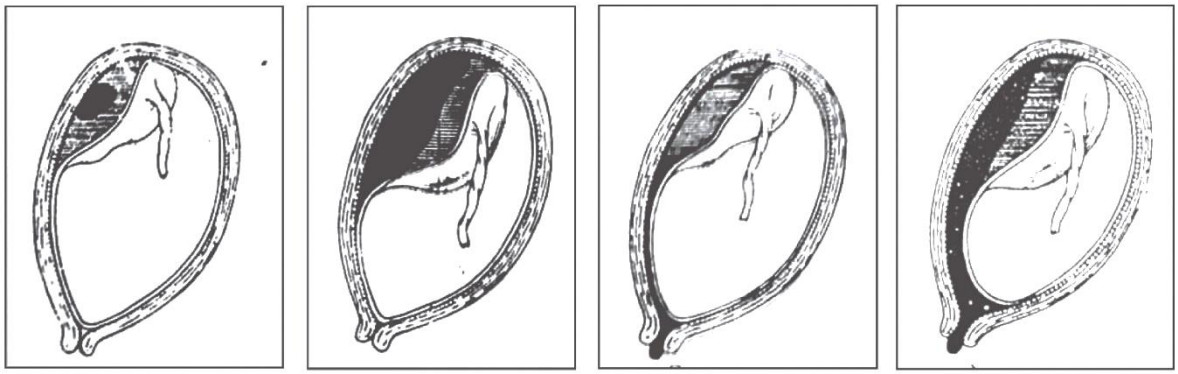
Types

- Revealed type (2/3 of cases) - 80% of cases, placenta separates at the edges. Bleeding is apparent.
- Concealed type (1/3 of cases) - 20% of cases, placenta separates at the center. Bleeding is concealed between placenta and uterine wall.
- Mixed type

Incidence

- 5% of pregnancies. Perinatal mortality rate is 4 per 1000.Recurrence is 4 - 12.5%

Fig: Different Types of Placental Abruption



Mild Concealed Severe Concealed Revealed Mixed

Aetiology and Associations

- The aetiology is unclear, but there are a number of recognized associations.
- High parity
- Rapid uterine decompression (rupture of membrane with poly hydramnios) Previous abruption
- Fetal abnormality
- Trauma (e.g., Assault, ECV) Smoking
- Pre-eclampsia
- Chronic chorioamnionitis
- Abnormal placentation (circumvallate placenta etc.) Underlying thrombophilia

Clinical features

Symptoms

- Asymptomatic in mild concealed type or Symptomatic
- Revealed Type
- Slight to heavy bleeding Per Vagina Abdominal discomfort
- Tenderness (anterior placentation)
- Uterus felt normal, fetal heart present, fetal parts are easily felt
- Differential diagnosis - placenta previa
- ***No VE until placenta previa is excluded by placenta localization.***
- **Concealed and Mixed type**
- Symptoms
- Acute constant severe abdominal pain which may be localized or diffused.
- Dark vaginal bleeding results from escape of blood from the retroplacental haematoma.
- Cessation of fetal movement is common.
- Past history of PE, Hypertension may be present.

Signs

- General Examination
- **Shock** is usually present and may be marked and not proportionate to the amount of visible bleeding due to Concealed and/or revealed haemorrhage
- Over distension of the uterus and damage of the myometrium causing neurogenic shock.

- Blood Pressure may be subnormal due to haemorrhage Normal due to falling from previous hypertension High due to slight bleeding in hypertensive patient
- Tachycardia
- Pallor is severe and out of proportion to the visible bleeding
- Urine output is usually diminished
- Abdominal Examination
    - Uterus is large for date and increasing gradually in size due to retained blood.
- Uterus is tense, very tender and hard (board-like).
- Fetal parts are difficult to be felt.
- FHS may be absent due to fetal death in severe cases or distressed in mild cases.

Differential diagnosis

- Other causes of antepartum haemorrhage and acute abdomen

Investigations

- Ultrasound: detects normally sited placenta with retroplacental haematoma that may dissect the placental margin. Should be used to
- confirm fetal viability
- assess fetal growth
- measure liquor volume
- confirm fetal normality
- exclude placenta praevia
- perform umbilical artery Doppler velocities
- Blood Hb is markedly lower
- Tests for DIC [BT, CT, platelet, fibrinogen, PTT (partial thromboplastin time)]
- Urine for albumin - usually present

Management

- Immediate Treatment
    - IV line with fluid (with wide bore needle)
    - Admission to hospital

Complications

- Maternal & Fetal
- Maternal mortality - 10% due to haemorrhage, DIC, renal failure Maternal morbidity is related to C.S, haemorrhage, coagulopathy
- Fetal mortality - 20-40% depend on the extent of abruption
- Fetal morbidity - is caused by the insult of abruption itself and related to prematurity
- Placental abruption effect on the mother
    - Hypovolemic shock DIC
    - Acute renal failure
    - PPH and Couvelaire uterus *(a blood infiltration of the uterine myometrium due to the formation of a massive retroplacental hematoma)*
    - Sheehan's syndrome due to ischaemia of anterior pituitary Maternal mortality
- Placental abruption effect on the fetus
    - Prematurity Perinatal mortality IUGR, IUFD

UTERINE RUPTURE

Incidence

- 0.05% for all pregnancies
- 0.8% after a previous low transverse c/s 75% in prior classical c/s
- 25% in prior uterine myomectomy

Risk factors

- Surgical procedures of uterus
- C/S, myomectomy, perforation, cornual resection, hysteroscopic or laparoscopic injuries, penetrating abdominal wounds
- Grand multiparity Obstetric trauma Fetal macrosomia Malpresentation Breech extraction
- Instrumental vaginal deliveries

Diagnosis

- **Before delivery**
  - History
    - History of prolonged or obstructed labour
    - History of previous caesarean section or myomectomy scar Bleeding per vagina
    - Severe abdominal pain which may decrease after rupture Sign and symptoms of shock - palpitation, fainting attack Ripping lower abdominal Pain
    - Referred Shoulder Pain On examination
    - Pallor, rapid pulse, BP less than 90/60 mmHg Abdominal distension and tenderness Abnormal uterine contour
    - Easily palpable fetal parts Loss of fetal presentation part
    - Absent fetal movement and Fetal Bradycardia or absent FHS
    - ruptured of lower uterine segment into broad ligament will not release blood into abdominal cavity, uterus deviate to one side by broad ligament haematoma High presenting part on vaginal examination
- **After delivery**
  - History
    - PPH - bright red blood
    - History of difficult instrumental delivery, previous uterine scar Abdominal pain
    - Symptom of shock
  - On examination
    - Pallor, sing of shock
    - Tender abdomen, uterus is irregular in shape, deviate to one side if there is broad ligament haematoma

Management

- Rapid evaluation of general condition and vital signs
- IV line and give crystalloid (normal saline or Ringer lactate) Refer to Hospital immediately
- She may need urgent laparotomy and hysterectomy or repair of tear (Repair → recurrent rupture: 19%)

Reference

(1) *Obstetrics and Gynaecology Management Guidelines, 1st Edition (2015), O&G Society, MMA*
(2) *Oxford handbook of General Practice, 4th Edition*

BLEEDING IN EARLY PREGNANCY

Definition

- Bleeding up to 14 weeks into pregnancy
- Bleeding in early pregnancy occurs in 1 in 4 pregnancies

Causes

- Bleeding in normal pregnancy - largest group
- Miscarriage
- Ectopic pregnancy
- Trophoblastic disease
- Non - obstetric conditions e.g., friable cervix, polyp, cervical neoplasia

Assessment

History

- Pain and bleeding: pain preceding bleeding (ectopic), any product of conception
- LMP and pregnancy test
- Pulse (>100 = shock), BP and temperature (toxic?)
- Abdomen: guarding, peritonism, and /or unilateral tenderness

Initial management

- If severe bleeding and/or pain, shocked or toxic →admit as emergency.
- If shocked → try to gain IV access and refer.

Complication of bleeding

- Significant sub-chorionic haematoma is associated with increased risk of premature rupture of membrane, Intrauterine growth retardation (UGR) → Refer to O&G
- Rhesus-negative women:
    - If there is clinical doubt, give anti-D
- *Bleeding <12wk gestation:*
    - Anti-D is not required for:
        - Threatened miscarriage unless heavy or repeated bleeding and/or abdominal pain, or
        - Complete miscarriage where no medical or surgical uterine evacuation
- *Bleeding >12wk gestation, ectopic pregnancy, and/or medical/surgical evacuation of the uterus at any gestation*
    - Give anti-D immunoglobulin (250iu IM if gestation <20wk) within 72 hours of bleeding-*whether or not* the pregnancy is lost
- *Bleeding in early normal pregnancy:* Often termed threatened miscarriage. If fetal heart is seen on USG (6-7 week) then -97% chance of the pregnancy continuing to progress. There is no evidence that rest or abstinence from sex improve outcome.

MISCARRIAGE

- Also termed spontaneous abortion, occurs m 1 in 5 pregnancies - 80% at 12 week gestation.

Risk Factors

- Maternal age >35 year or paternal age >40 years
- Smoking
- BMI >29 kg/m^2 - 32 kg/$m^{2,}$ risk is increased by 30%
- Excess alcohol

Causes

- Fetal abnormalities (50%)
- Multiple pregnancy
- Uterine abnormality: fibroid, polyps, congenital abnormality, cervical incompetence (late second trimester miscarriage)
- Systemic disease: renal, autoimmune or connective tissue disease - SLE, Poly cystic ovarian syndrome (PCOS), DM, systemic infection
- Drugs: cytotoxics, diethylstilbestrol
- Placental vascular abnormalities

Classification

- Complete miscarriage
  - Bleeding (+), No products of conception in the uterus.
  - Provide psychological support
- Incomplete miscarriage
  - Bleeding (+), product of conception in the uterus (+) No fetal heart sound
  - Usually refer or watch and wait (At 3 days, 86% will be complete)
- Missed or delayed miscarriage
  - No bleeding, No heart beat (USG scan)
  - Refer (evacuation of retained products of conception), or watch and wait (4 week only 66% complete and associated with longer bleeding.

Medical management

- With prostaglandin analogue (PGE1 misoprostol 200 µg bd orally) ± antiprogesterone (mifepristone) priming
- Fertility may increase immediately after miscarriage.

Complications

- Early: perforation of uterus, retained products of conception, infection
  - Treat with antibiotics if infection is suspected (doxycycline 100 mg od)
  - Readmit /refer if shock, pain, heavy bleeding, or bleeding is not settled
- Later: uterine synechiae (Asherman's syndrome, cervical incompetence, psychological sequelae

RECURRENT MISCARRIAGE

- 3 or more consecutive spontaneous miscarriages
- Age: increased with age (both man and woman)
- History
  - How many Miscarriages?

    - Confirmed pregnancy?
    - With same partner?
    - What gestation?
- The more miscarriage the lower the chance of successful pregnancy
- Fertility treatment 25-30% of women who miscarry
- **Past history:** gynaecological problems (cervical instrumentation, PCOS), systemic disease
- **Family History:** recurrent miscarriage, thrombosis/thrombophilia

Management

Refer:

- ***In treatable*** *causes*
    - Antiphospholipid antibodies (15%)
    - Low dose asprin+lower molecular weight heparin (LMWH) 6-34 weeks improves outcome.
- **Inherited thrombophilia (Factor V Leiden, prothrombin gene mutation or protein** S ***(vitamin K-dependent plasma glycoprotein synthesized in the liver)*** **deficiency)**
    - If **recurrent miscarriage:** 10 weeks, treatment with LMWH increased live birth rate
- **Cervical incompetence**
    - History of 2: late second trimester or early third trimester miscarriage (usually painless leaking of liquor or gradual painless dilation of cervix)
    - **Refer**
- **Chromosomal abnormality in one parent** (3-5%)
    - **Refer**

ECTOPIC PREGNANCY

- Egg implants outside the uterine cavity - 95% in a fallopian tube Incidence - 1 in 1000 pregnancies.

Risk factors:

- Pelvic inflammatory disease (single episode increase risk 7 times)
- Previous ectopic (11%)
- IUD (14%)
- Infertility (15%)
- Tubal surgery
- Age >35 years
- Smoking
- Multiple partners

History

- **Abdominal pain** (97%).
- Unilateral or bilateral, may start before bleeding; radiates to shoulder tip; increase on passing urine/opening bowels
- **Amen6ti7orrhoea** (75%).
- Peak incidence after 7wk amenorrhoea
- Irregular vaginal bleeding (79%).
- Described as "prune juice" but may be fresh blood; usually not heavy. May pass decidual cast

Examination

- Anaemia (marked pallor)
- Shock in 15-20%;

- Abdominal tenderness ± rebound or guarding (71%);
- Pelvis - enlarged uterus, adnexal mass, and/or cervical excitation.

Management

- Admit immediately for further investigation.
- **Resuscitate** before admission as needed.
- Hospital management may be expectant (watch and pregnancy resolves spontaneously), medical (methotrexate), or surgical (laparotomy or laparoscopic surgery).
- Offer early USS in future pregnancies to confirm pregnancy is intrauterine.

Complications

- Death if undetected, infertility (pregnancy rate post-ectopic pregnancy is 66% with 10% having a further ectopic pregnancy).

TROPHOBLASTIC DISEASES

HYDATIDIFORM MOLE

- Trophoblastic tumour containing 46 chromosomes (usually of paternal origin) and no fetal material
- 8-2-% become invasive and penetrated the uterus and/or metastasize to the lungs
- Presents with:
    - Bleeding in early pregnancy ± **exaggerated symptoms** of pregnancy
    - Uterus is usually **large for dates,** and **no fetal heart** can be heard.
- Ultrasound has a typical appearance
- Blood: increased serum HCG
- Rarely symptoms of metastatic spread: haemoptysis, pleurisy
- Refer urgently to gynaecology.
- If mole is confirmed, women are followed up by specialist centres.
- Invasive disease requires chemotherapy.
- Combined hormonal contraception is contraindicated until normal HCG values are obtained.
- Pregnancy is not advised until completion of the surveillance period.
- Investigate with early Ultrasound and -HCG as incidence of further molar pregnancy is **1** in 80.

PARTIAL MOLE

- Tumour of trophoblast containing 69 chromosomes, **1** maternal and 2 paternal set, with **some fetal tissue**
- A **fetal heart** may be seen on **early ultrasound** but is **absent by 8-9 wk.**
- Treat as for mole.
- Rarely becomes malignant (0.5%).

CHORIOCARCINOMA

- Malignant trophoblastic tumour following molar (rarely normal) pregnancy
- Presents with vaginal bleeding and/or metastases (shadows on CXR, dyspnoea, hemoptysis)
- Excellent prognosis after treatment with chemotherapy
- No contraceptive restrictions after completion of therapy; pregnancy is possible >**1** year after treatment.

PLACENTAL SITE TROPHOBLASTIC TUMOUR (PSTT)

- Rare
- Follows 3-4 years after normal pregnancy

- Prognosis is good

PSYCHOLOGICAL EFFECTS OF EARLY LOSS OF PREGNANCY

- Broach the subject with all women who have suffered early loss of pregnancy, include the woman's partner if possible.
- Legitimize grief and acknowledge it - not all women grieve - adjust your approach accordingly; discuss worries/concerns
- Provide information about the condition which caused the loss; risk to future pregnancies (if <3 miscarriages, risk of further miscarriage is not significantly increase risk of further ectopic pregnancy is - 2 in 10); and self-help/support organizations, e.g. Miscarriage Association

Reference

(1) *Obstetrics and Gynaecology Management Guidelines, 1st Edition (2015), O&G Society, MMA*

(2) *Oxford handbook of General Practice, 4th Edition*

MEDICAL DISEASE IN PREGNANCY

HYPERTENSIVE DISORDERS IN PREGNANCY

Definitions

CHRONIC HYPERTENSION:

- Hypertension presents at booking visit or before 20 weeks or that is being treated at the time of referral to maternity services. It can be primary or secondary in aetiology.

ECLAMPISA:

- *Convulsive condition* associated with pre-eclampsia.

GESTATIONAL HYPERTENSION:

- New hypertension presenting *after 20 weeks* without significant proteinuria.

PRE-ECLAMPSIA:

- New hypertension presenting after 20 weeks with *significant proteinuria.*

SEVERE PRE-ECLAMPSIA:

- Pre-eclampsia with severe hypertension and/or with **symptoms,** and/or **biochemical** and/or **haematological impairment.**
- Pregnancy related blood pressure problems (such as pregnancy-induced hypertension or pre-eclampsia) do not occur before 20 weeks. The raised ambulatory blood pressure readings exclude a diagnosis of white-coat hypertension.
- Note the use of the term pre-existing hypertension rather than essential hypertension. Raised blood pressure in a 36-year-old female is not that common and raises the possibility of secondary hypertension.
- Women who are at high risk of developing pre-eclampsia should take aspirin 75mg OD from 12 weeks until the birth of the baby.

High risk groups

- Hypertensive disease during previous pregnancies
- Chronic kidney disease
- Autoimmune disorders such as SLE or antiphospholipid syndrome
- Type 1 or 2 Diabetes Mellitus

In normal pregnancy:

- Blood pressure usually falls in the first trimester (particularly the diastolic), and continues to fall until 20-24 weeks.
- After this time the blood pressure usually increases to pre-pregnancy levels by term.

Hypertension is defined as

- Systolic >140 mmHg or diastolic >90 mmHg
- Or an increase above booking readings of >30 mmHg systolic or >15 mmHg diastolic After establishing that the patient is hypertensive, they should be categorized into one of the following

groups.

Pre-existing hypertension

- A history of hypertension before pregnancy or an elevated blood pressure >140/90 mmHg before 20 weeks gestation
- No proteinuria, no oedema
- Occurs in 3-5% of pregnancies and is more common in older women

- **Pregnancy-induced hypertension** (PIH, also known as gestational hypertension)
  - Hypertension (as defined above) occurring in the second half of pregnancy (i.e. after *20 weeks)*
  - No proteinuria, no oedema
  - Occurs in around 5-7% of pregnancies
  - Resolves following birth (typically after one month). Women with PIH are at increased risk of future pre-eclampsia or hypertension later in life.
- **Pre-eclampsia**
  - Pregnancy-induced hypertension in association with *proteinuria* (>0.3 g/24 hour)
  - *Oedema* may occur but is now less commonly used as a criteria
  - Occurs in around 5%of pregnancies.
- **Severe pre-eclampsia** is associated with *hyper-reflexia* and *clonus.*
  - A low platelet count may indicate the patient is developing HELLP syndrome (life-threatening liver disorder characterized by haemolysis, elevated liver enzymes, and low platelet count)
  - Pre-eclampsia is important as it predisposes to the following problems
  - Foetal: prematurity, intrauterine growth retardation
- **Eclampsia**
- **Haemorrhage:** placental abruption, intra-abdominal, intra- cerebral
- **Cardiac failure**
- **Multi-organ failure**

Risk factors

- >40 years old
- Nulliparity (or new partner)
- Multiple pregnancy
- Body mass index >30 kg/m^2
- Diabetes mellitus
- Pregnancy interval of more than 10 years
- Family history of pre-eclampsia
- Previous history of pre-eclampsia
- Pre-existing vascular disease such as hypertension or renal disease

Features of Severe Pre-eclampsia

- Hypertension: typically >170/ 110 mmHg and proteinuria as above
- Proteinuria: dipstick ++/+++
- Headache
- Visual disturbance
- Papilloedema
- Right upper quadrant (RUQ)/epigastric pain
- Hyperreflexia
- Platelet count <100 x 10^6 /1, abnormal liver enzymes or HELLP syndrome

Management

- Consensus guidelines recommend treating blood pressure >160/ 110 mmHg although many

clinicians have a lower threshold.

- Oral labetalol 100 mg bd is now first-line following 2010 NICE guidelines. Nifedipine and hydralazine may also be used.
- Delivery of the baby is the most important and definitive management step. The timing depends on the individual clinical scenario.

Management of Severe Pre-eclampsia with Pregnancy

Degree of Hypertension	Mild hypertension (140/90 to 149/99mmHg)	Moderate Hypertension (150/100 to 159/109mmHg)	Severe Hypertension (160/110 mmHg onwards)
Admit to Hospital	Yes	Yes	Yes
Treat?	No	With oral labetalol as first-line treatment	With oral labetalol as first-line treatment
Measure BP	At least four times a day	At least four times a day	More than four times a day

PREGNANCY: DIABETES MELLITUS

- The oral glucose tolerance test remains the investigation of choice for gestational diabetes.
- Women who are at risk of gestational diabetes should have an oral glucose tolerance test as soon as possible after booking, rather than waiting to 16-18 weeks as was previously advocated.
- *Insulin* should be started straight away given the blood glucose levels and evidence of macrosomia.
- *Aspirin* should also be considered as she is at increased risk of pre-eclampsia.
- Diabetes mellitus may be a pre-existing problem or develop during pregnancy, gestational diabetes. It complicates around 1 in 40 pregnancies NICE updated the guidance in 2015

Risk factors for gestational diabetes

- BMI of >30 kg/m^2
- Previous macrosomic baby weighing 4.5 kg or above
- Previous gestational diabetes
- First-degree relative with diabetes
- Family origin with a high prevalence of diabetes (South Asian, black Caribbean and Middle Eastern)

Screening for gestational diabetes

- Women who've previously had gestational diabetes: oral glucose tolerance test (OGTT) should be performed as soon as possible after booking and at 24-28 weeks if the first test is normal. NICE also recommend that *early self-monitoring of blood glucose* is an alternative to the OGTTs
- Women with any of *the other risk factors should be offered an OGTT at 24-28 weeks*

Diagnostic thresholds for gestational diabetes

- These have recently been updated by NICE, gestational diabetes 1s diagnosed if either:
- Fasting glucose is >5.6 mmol /1 (100 mg%)
- 2-hour glucose is >7.8 mmol /1 (140 mg%)

Management of gestational diabetes

- Newly diagnosed women should be seen in a joint diabetes and antenatal clinic within a week.
- Women should be taught about self-monitoring of blood glucose (SMBG)

- Advice *about diet* (including eating foods with a low glycaemic index) *and exercise* should be given.
- If the fasting plasma glucose level is <7 mmol / 1, a trial of diet and exercise should be offered.
- If glucose targets are not met within 1-2 weeks of altering diet/ exercise *metformin* should be started.
- If glucose targets are still not met *insulin* should be added to diet/exercise/metformin.
- If at the time of diagnosis, the fasting glucose level *is* >7 *mmol / l* insulin should be started.
- If the plasma glucose level is *between 6 - 6.9 mmol / l, and there is evidence of complications such as macrosomia or hydramnios, insulin should be offered.*
- Glibenclamide ***should only*** be offered for women who cannot tolerate metformin or those who fail to meet the glucose targets with metformin but decline insulin treatment.
- NICE have recently changed their gestational diabetes guidelines. Insulin should be started in the fasting glucose is >7 mmol /l.
- Aspirin should also be considered given the increased risk of pre-eclampsia.

Management of pre-existing diabetes

- *Weight loss for* women with BMI of >27 kg/m^2
- Stop oral hypoglycaemic agents, apart from *metformin, and* commence insulin.
- *Folic acid 5mg/day* from pre-conception to 12 weeks gestation
- *Detailed anomaly scan at 20 weeks* including four-chamber view of the heart and outflow tracts
- Tight glycaemic control reduces complication rates.
- *Treat retinopathy* as can worsen during pregnancy and refer. Diabetes in pregnancy: *detailed heart scan at 18-20 weeks*
- Targets for self-monitoring of pregnant women (pre-existing and gestational diabetes)

Time	***Target***
Fasting	5.3 mmol/1 (95 mg%)
1 hour after meals	7.8 mmol/1 (140 mg%)
2 hours after meals	6.4 mmol/1 (115 mg%)

- Patients with diabetes (type 1 and 2) should take aspirin 75 mg daily from 12 weeks gestation to reduce the risk of *pre-eclampsia.* They are also at higher risk of *neural tube defects,* therefore should take the *higher dose of Jolie acid, 5mg daily,* whilst trying to conceive until 12 weeks gestation. Pregnant women who have risk factors such as this should be referred at booking.
- All pregnant and breastfeeding women are advised to take *vitamin D 10 µg (400 JU) daily.*
- A *vitamin B12 supplement* may be advised for pregnant women who eat a vegan diet

Pregnancy: diabetes + complications

Maternal complications

- Polyhydramnios - 25%, possibly due to fetal polyuria
- Preterm labour- 15%, associated with polyhydramnios Neonatal complications
- Macrosomia (although diabetes may also cause small for gestational age babies)
- Hypoglycaemia (secondary to beta cell hyperplasia)
- Respiratory distress syndrome: surfactant production is delayed
- Polycythaemia: therefore, more neonatal jaundice.
- Malformation rates increase 3-4 folds, e.g., sacral agenesis, CNS and CVS malformations (hypertrophic cardiomyopathy)
- Stillbirth
- Hypomagnesaemia
- Hypocalcaemia
- Shoulder dystocia (may cause Erb's palsy)

PREGNANCY: ANAEMIA

- Pregnant women are screened for anaemia at:
    - The booking visit (often done at 8-10 weeks), and at 28 weeks
- NICE use the following cut-offs to determine whether a woman should receive oral iron therapy:

Gestation	Cut-off
Booking visit	<11 g/dl
28 weeks	<10.5 g/dl

Rhesus negative pregnancy

- Anti-D is still required following delivery even if the mother received routine antenatal anti-D prophylaxis.
- Subsequent pregnancies are most at risk following the sensitizing event of the first childbirth. A basic understanding of the pathophysiology is essential to understand the management of Rhesus negative pregnancies.
- Along with the ABO system the *Rhesus system* is the most important antigen found on red blood cells. *The D antigen* is the most important antigen of the rhesus system
- Around 15% of mothers are rhesus negative Rh(-ve)
- If a Rh(-ve) mother delivers a Rh(+ve) child a leak of fetal red blood cells may occur.
- This causes anti-D IgG antibodies to form in mother.
- In later pregnancies these can cross placenta and cause haemolysis in fetus.
- This can also occur in the first pregnancy due to leaks.

Prevention

- Test for D antibodies in all Rh(-ve) mothers at booking.
- NICE (2008) advise giving anti-D to non- sensitized Rh(-ve) mothers at 28 and 34 weeks or 'depending on local guideline'.
- Anti-D is prophylaxis - once sensitization has occurred it is irreversible.
- If event is 2nd - 3rd trimester, give large dose of anti-D and perform Kleihauer-Betke test - determines proportion of fetal RBCs present.
- **Anti-D immunoglobulin** should be given as soon as possible (but *always within 72 hours)* in the following situations:
- Delivery of a Rh(+ve) infant, whether live or stillborn
- Any termination of pregnancy
- Miscarriage if gestation is >12 weeks
- Ectopic pregnancy
- External cephalic version
- Antepartum haemorrhage
- Amniocentesis, chronic villus sampling, fetal blood sampling

Tests

- All babies born to Rh (-ve) mother should have *cord blood taken at delivery* for FBC, blood group & direct Coombs test.
- Coombs test: direct antiglobulin, will demonstrate antibodies on RBCs of baby.
- Kleihauer-Betke test: add acid to maternal blood, fetal cells are resistant.

AFFECTED FETUS

- Oedematous (hydrops fetalis, as liver devoted to RBC production albumin falls)
- Jaundice, anaemia, hepatosplenomegaly
- Heart failure
- Kernicterus

Treatment:

- transfusions, UV phototherapy

PREGNANCY: THYROID PROBLEMS HYPERTHYROIDISM

- Propylthiouracil is traditionally taught as the antithyroid drug of choice in pregnancy. This approach was supported by the 2007 Endocrine Society consensus guidelines. It also has the advantage of being excreted to a lesser extent than carbimazole in breast milk.
- Despite this some endocrinologists use carbimazole and the BNF states both drugs may be used in pregnancy. Carbimazole has rarely been associated *with aplasia cutis of the neonate* In pregnancy there is an increase in the levels of thyroxine-binding globulin (TBG). This causes an increase in the levels of total thyroxine but does not affect the free thyroxine level.

Thyrotoxicosis

- Untreated thyrotoxicosis increases the risk of fetal loss, maternal heart failure and pre mature labour.
- Graves' disease is the most common cause of the thyrotoxicosis in pregnancy. It is also recognized that *activation of the TSH receptor* by HCG levels will fall in second and third trimester.

Management

- Propylthiouracil has traditionally been the antithyroid drug of choice.
- Maternal free thyroxine levels should be kept in the *upper third of the normal reference range to avoid fetal hypothyroidism*
- **Thyrotrophin receptor stimulating antibodies** should be checked at *30-36 weeks gestation*, helps to determine risk of neonatal thyroid problems. Block-and-replace regimes should *not be* used in pregnancy.
- **Radioiodine therapy is contraindicated**

Hypothyroidism

- Thyroxine is safe during pregnancy
- Serum thyroid stimulating hormone measured in *each trimester* and 6-8 weeks post- partum.
- Some women require an increased dose of thyroxine during pregnancy
- Breast feeding is safe whilst on thyroxine.

EPILEPSY: PREGNANCY AND BREAST FEEDING

- Epilepsy + pregnancy = 5mg folic acid
- The risks of uncontrolled epilepsy during pregnancy generally out-weight the risks of medication to the fetus. All women thinking about becoming pregnant should be advised to take folic acid 5mg per day well before pregnancy to minimize the risk of neural tube defects. Around 1-2% of newborn born to non-epileptic mothers have congenital defects. This rises to 3-4% if the mother takes antiepileptic medication.

Other points

- *Aim for monotherapy*
- There is no indication to monitor antiepileptic drug levels.
- ***Sodium valproate:*** associated with *neural tube defects*

- ***Carbamazepine:*** often considered the least teratogenic of the older antiepileptics.
- ***Phenytoin:*** associated with *cleft palate*
- ***Lamotrigine:*** studies to date suggest the rate of congenital malformations may be low. The dose of lamotrigine may need to be increased in pregnancy.

Breast feeding

- is generally considered safe for mothers taking antiepileptics with the possible *exception of the barbiturates.*
- It is advised that pregnant woman taking phenytoin are given. **Vitamin** *K in the last month of pregnancy* to prevent clotting disorders in the newborn

Sodium valproate:

- The November 2013 issue of the Drug Safety Update also carried a warning about new evidence showing a significant risk of neurodevelopmental delay in children following maternal use of sodium valproate.
- The update concludes that *sodium valproate should not be used* during pregnancy and in
- woman of childbearing age unless clearly necessary. **Women of childbearing age should not start treatment without specialist neurological or psychiatric advice.**

PREGNANCY: JAUNDICE

Intrahepatic cholestasis of pregnancy

- Pruritus
- Bilirubin <100
- Occurs in 2nd and 3rd trimester

Management

- Risk of preterm labour, fetal distress, stillbirth
- Give Vitamin K to both the mother and the baby
- Ursodeoxycholic acid to reduce pruritus

Acute fatty liver of pregnancy

- Acute fatty liver of pregnancy is rare complication which may occur on the third trimester or the period immediately following delivery.

Features

- Abdominal pain
- Nausea & vomiting
- Headache
- Jaundice
- Hypoglycaemia
- Severe disease may result in pre-eclampsia

Investigations

- ALT is typically elevated e.g., 500u/l

Management

- Support care
- Once stabilized delivery is the definitive management
- Gilbert's, Dubin-Johnson syndrome, may be exacerbated during pregnancy HELLP (Haemolysis, Elevated Liver enzymes, Low Platelets)

HEPATITIS B in PREGNANCY

- Without intervention the vertical transmission rate is around 20%, which increases to 90% if the woman is positive for HBeAg.
- HBeAg is a marker of infectivity. The Green Book guidelines advise giving both the vaccine and immunoglobulin in this situation. If the patient had antibodies against HBe (anti-HBe), rather than the HBeAg, then only the vaccine would need to be given.

Basics

- All pregnant women are offered screening for hepatitis B
- Babies born to mothers who are chronically infected with hepatitis B or to mothers who've had acute hepatitis B during pregnancy should receive a complete course of vaccination + hepatitis B immunoglobulin
- Studies are currently evaluating the role of oral antiviral treatment (e.g. Lamivudine) in the latter part of pregnancy
- There is little evidence to suggest caesarean section reduces vertical transmission rates.
- Hepatitis B cannot be transmitted via breastfeeding (in contrast to HIV).

MIGRAINE: PREGNANCY

- Contraception and other hormonal factors
- SIGN produced guidelines in 2008 on the management of migraine, the following is selected highlights:

Migraine during pregnancy

- Paracetamol one gram is first-line
- Aspirin 300mg or ibuprofen 400 mg can be used second-line in the first and second trimester

Migraine and the combined oral contraceptive (COC) pill

- If patients have **migraine with aura,** then the COC is absolutely contraindicated due to an risk of stroke (relative risk 8.72)

Migraine and menstruation.

- Many women find that the frequency and severity of migraines increase around the time of menstruation.
- SIGN recommends that women are treated with mefenamic acid or a combination of aspirin, paracetamol and caffeine. Triptans are also recommended in the acute situation

Migraine and hormone replacement therapy (hrt)

- Safe top prescribes HRT for patients with a history of migraine but it may make migraines worse.

RHEUMATOID ARTHRITIS: PREGNANCY

- Rheumatoid arthritis (RA) typically develops in women of a reproduction age.
- Patients with early or poorly controlled RA should be advised to defer conception until their disease is more stable.
- RA symptoms tend to improve in pregnancy but only resolve in a small minority. Patients tend to have a flare following delivery
- Methotrexate is not safe in pregnancy and needs to be stopped at least 3 months before conception
- Leflunomide is not safe in pregnancy
- *Sulfasalazine and hydroxychloroquine* are considered safe in pregnancy
- Interesting studies looking at pregnancy outcomes in patients treated
- With TNF-a blockers do not show any significant increase in adverse outcomes. It should be noted however that many of the patients included in the study stopped taking TNF-a blockers when they found out they were pregnant.
- Low-dose corticosteroids may be used in pregnancy to control symptoms.
- NSAIDs may be used until 32 weeks but after this time should be withdraw due to the risk of early close of the *ductus arteriosus*
- Patients should be referred to an obstetric anaesthetist due to the risk of atlanto-axial subluxation.

HIV AND PREGNANCY

- The aim of treating HIV positive women during pregnancy is to minimize harm to both the mother and fetus, and to reduce the chance of vertical transmission.
- Factors which reduce vertical transmission (from 25-30% to 2%)
- Maternal antiretroviral therapy
- Mode of delivery (caesarean section)
- Neonatal antiretroviral therapy
- Infant feeding (bottle feeding)

Screening

- NICE guidelines recommend offering HIV screening to all pregnant women

Anti-Retroviral Therapy

- All pregnant women diagnosed HIV infected should receive antiretroviral therapy regardless of whether they were taking it previously.
- Prevention of mother to child transmission (PMCT) can be started whatever the gestational age.
- Treatment is recommended life-long but, if possible, should at least be given until one week after cessation of breastfeeding.

Mode of Delivery

- Vaginal delivery is recommended if viral load is *less than 50 copies/ml at 36 weeks*, otherwise caesarian section is recommended.
- A zidovudine infusion should be started four hours before beginning the caesarean section

Neonatal Anti-Retroviral Therapy

- Zidovudine is usually administered orally to the neonate if maternal viral load is <50 copies/ml. otherwise *triple ART* should be used. Therapy should be continued for 4-6 weeks.

Infant Feeding

- Infant feeding options include either exclusive breastfeeding or formula feeding alone.
- Mixed feeding is not encouraged.

BACTERIAL VAGINOSIS

- This history and presence of clue cells suggests a diagnosis of bacterial vaginosis. The BNF suggests topical clindamycin as an alternative treatment for patients who are allergic to metronidazole.
- Bacterial vaginosis increases the risk of miscarriage and premature birth. There is increasing evidence that metronidazole is safe in pregnancy. Of note there is no evidence of teratogenicity with its use in the first trimester of pregnancy. The guidelines recommend the treatment of symptomatic patients at all stages of pregnancy. Metronidazole and oral clindamycin enter breast milk. Clindamycin intravaginal gel is recommended for breast feeding women.

CHICKENPOX EXPOSURE IN PREGNANCY

- Chicken pox is caused by primary infection with varicella zoster virus. Shingles is reactivation of dormant virus in dorsal root ganglion. In pregnancy there is a risk to both the mother and also the fetus, a syndrome now termed fetal varicella syndrome.

Risk to the mother

- 5 times greater risk of pneumonitis

Fetal varicella syndrome (FVS)

- Risk of FVS following maternal varicella exposure is around 1% if occurs before 20 weeks gestation.
- Studies have shown a very small number of cases occurring between 20-28 weeks gestation and none following 28 weeks
- Features of FVS include skin scarring, eye defects (microphthalmia), limb hypoplasia, microcephaly and learning disabilities

Other risks to the fetus

- Shingles in infancy: 1-2% risk if maternal exposure in the second or third trimester
- Severe neonatal varicella: if mother develops rash between 5 days before and 2 days after birth there is a risk of neonatal varicella, which may be fatal to the newborn child in around 20% of cases

Managements of Chickenpox Exposure

- If there is any doubt about the mother previously having chickenpox maternal blood should be urgently checked for varicella antibodies\
- If the pregnant woman is not immune to varicella, she should be given varicella zoster immunoglobulin (VZIG) as soon as possible. RCOG and Greenbook guidelines suggest VZIG is effective up to 10 days post exposure
- Consensus guidelines suggest oral acyclovir should be given if pregnant women with chickenpox present within 24 hours of onset of the rash
- A second dose of VZIG may be required if a further exposure is reported and 3 weeks have elapsed since the last dose.

- Chickenpox exposure in pregnancy - first step is to check antibodies
- The negative IgG indicates no previous exposure to chickenpox
- Chickenpox exposure in pregnancy - if not immune give VZIG
- If there is any doubt about the mother previously having chickenpox maternal blood should be checked for varicella antibodies

URINARY TRACT INFECTION IN ADULTS: MANAGEMENT

- A test of cure MSU should be sent in pregnant women treated for a UTI
- Pregnant women should be prescribed a 7 days course of antibiotics. Nitrofurantoin should only be avoided in the third trimester
- Amoxicillin is also recommended in this situation (38 weeks preg). Nitrofurantoin should be avoided near term as it may cause neonatal haemolysis but it may be used earlier in the pregnancy.

ASYMPTOMATIC BACTERIURIA IN PREGNANT WOMEN

- Repeat MSU
- If confirmed treat with amoxicillin or a cephalosporin
- SIGN advised that pregnant women with asymptomatic bacteriuria should have a second urine culture to confirm the result.

Lower urinary tract infections in non-pregnant women

- Trimethoprim or cephalexin for 3 days
- Pregnant women with symptomatic bacteriuria should be treated with an antibiotic for 7 days. A urine culture should be sent.

For asymptomatic pregnant women:

- A urine culture should be performed routinely at the first antenatal visit
- If positive, a second urine culture should be sent to confirm the presence of bacteriuria
- SIGN recommend to treat asymptomatic bacteriuria detected during pregnancy with an antibiotic
- A 7 days course of antibiotics should be given
- A further urine culture should be sent following completion of treatment as a test of cure.
- For patients with sign of acute pyelonephritis, hospital admission should be considered
- Local antibiotic guidelines should be followed if available.
- The BNF currently recommends a broad-spectrum cephalosporin or a quinolone for 10-14days.

HERPES SIMPLEX VIRUS

- This patient has genital herpes simplex virus (HSV). The guidelines recommend treatment with oral (or intravenous) *acyclovir at any stage in pregnancy*. Acyclovir is not licensed in pregnancy but is considered safe and not associated with birth defects. It is well tolerated in pregnancy. Paracetamol and topical lidocaine 2% gel can be used for symptomatic relief
- The primary purpose of treatment is to reduce the risk of transmission to the neonate at birth. The risk is much more considerable with primary genital herpes simplex within the final six weeks of pregnancy. *Caesarian section* should be the recommended mode of delivery for all women developing the first episode of genital HSV in the third trimester.
- There are two strains of the herpes simplex virus (HSV) in humans: HSV **-1** and HSV-2. Whilst it was previously thought HSV-1 accounted for oral lesions (cold sores) and HSV-2 for genital herpes it is now known there is considerable overlap.

Features

- Primary infection: may present with a severe gingivostomatitis
- Cold sores
- Painful genital ulceration

Management

- Gingivostomatitis: oral acyclovir, chlorhexidine mouthwash
- Cold sores: topical acyclovir although the evidence base for this is modest
- Genital herpes: oral acyclovir. Some patients with frequent exacerbations may benefit from longer term acyclovir.

HYPEREMESIS GRAVIDARUM

- Smoking is associated with a decreased incidence of hyperemesis gravidarum.
- Hyperemesis is gravidarum describes excessive vomiting during pregnancy. It occurs in around 1% of pregnancies and is thought to be related to raised beta hCG levels.
- Hyperemesis gravidarum is most common between 8 and 12 weeks but may persist up to 20 weeks.
- Multiple pregnancies
- Trophoblastic disease
- Hyperthyroidism
- Nulliparity
- Obesity
- Smoking is associated with a decreased incidence of hyperemesis

Management

- Antihistamines should be used first-line (BNF suggests promethazine as first-line)
- Admission may be needed for IV hydration

Complications

- Wernicke's encephalopathy
- Mallory-Weiss tear
- Central pontine myelinolysis
- Acute tubular necrosis
- Fetal: small for gestational age, pre-term birth and in very rare cases beyond 20 weeks.

PRESCRIBING IN PREGNANT PATIENTS

- Orlistat is not a known teratogenic it should be used with 'caution' in pregnancy according to the BNF and the benefits are very likely outweighed by risks.
- Very few drugs are known to be completely safe in pregnancy.

The list below largely comprises of those known to be harmful.

Antibiotics

- Tetracyclines
- Aminoglycosides

- Sulphonamides and trimethoprim
- Quinolones: e.g., ciprofloxacin the BNF advises to avoid due to arthropathy in some animal studies

Other drugs

- ACE inhibitors, angiotensin II receptor antagonists
- Statins
- Warfarin
- Sulfonylureas
- Retinoids (including topical)
- Cytotoxic agents
- The majority of anti-epileptics including valproate, carbamazepine and phenytoin are known to be potentially harmful. The decision to stop such treatments however is difficult as uncontrolled epilepsy is also a risk
- Warfarin is contraindicated in pregnancy. Most women are switched to low-molecular weight heparin for the duration of the pregnancy.
- The BNF advises avoiding quinolones in pregnancy due to arthropathy in animal studies.
- There have been some reports of an increased risk of necrotizing entercolitis following the use of co-amoxiclav in pregnancy. The evidence is however inconclusive and the BNF states that co-amoxiclav is 'not known to be harmful'. A link is provided both to the BNF and the UK teratology information service.

SUPPLEMENTS IN PREGNANCY

Folic acid

- Folic acid is converted to tetrahydrofolate (THF). Green, leafy vegetables are a good source of folic acid.

Functions

- THF plays a key role in the transfer of I-carbon units (e.g., methyl, methylene, and formyl groups) to the essential substrates involved in the synthesis of DNA & RNA

Causes of Folic Acid Deficiency

- Phenytoin
- Methotrexate
- Pregnancy
- Alcohol excess

Consequences of folic acid deficiency:

- Macrocytic, megaloblastic anaemia
- Neural tube defects
- Women are advised to take folic acid 400 mcg when trying to conceive through to 12 weeks gestation to reduce the incidence of neural tube defects.
- A higher dose of 5mg is indicated if there are additional risk factors e.g. diabetes or personal or family history of neural tube defects.
- A daily supplement of vitamin D 1Omcg is also advised throughout pregnancy for bone health, and should be continued for the duration of breastfeeding.
- If a woman chooses to take a multivitamin in pregnancy, she should be advised to ensure it does

not contain vitamin A (retinol) as it is teratogenic in high doses.

Vitamin b12 (cobalamin)

- A B12 supplement may be indicated for breastfeeding women who eat a vegan diet. This is because vitamin B12 is mainly found in meat and dairy products. Dietary sources of vitamin B12 suitable for vegans may include fortified breakfast cereals, and yeast extracts (e.g., Marmite).
- The NHS also advises that all breastfeeding women - whatever their diet - should take a daily supplement of vitamin D **10** mcg for the bone health of themselves and their baby. Some women may be eligible for free supplements, if they qualify for Healthy Start vouchers; the Health Visitor can advise.
- Vitamin B12 is a water-soluble vitamin of the B complex group.
- Typically, humans have enough reserves of vitamin B12 to last 5 years.
- Vitamin B12 is unusual in only being found in animal products.

Functions

- Cofactor for the conversion of homocysteine into methionine via the enzyme homocysteine methyltransferase
- Cofactor for the isomerization of the methylmalonyl CoA to Succinyl CoA via the enzyme methylmalonyl mutase
- Used to regenerate folic acid in the body

Causes of vitamin B12 deficiency:

- Pernicious anemia
- Diphyllobothrium latum infection
- Crohn's disease

Consequences of vitamin B12 deficiency:

- Macrocytic, megaloblastic anaemia
- Peripheral neuropathy

Vitamin d supplementation

- Vitamin D 10 µg is now recommended throughout pregnancy for all women.
- Low dose folic acid 400 µg is recommended for all women for the first 12 weeks of pregnancy. Women with pregnancies at risk of neural tube defects should take 5 mg folic acid for the first 12 weeks of pregnancy.
- A B12 supplement may be indicated for breastfeeding women who eat a vegan diet.
- Pregnant women should be advised that if they wish to take a multivitamin tablet to ensure it does not contain vitamin A, as this can be teratogenic in high doses.
- Pregnancies at high risk of neural tube defects are those in which either partner has a neural tube defect (or either partner has a family history of neural tube defects), if they have had a previous pregnancy affected by a neural tube defect, or if the woman has coeliac disease (or other condition causing malabsorption), diabetes mellitus, sickle-cell anaemia, or is taking antiepileptic medicines, Soft-cheese should be avoided during pregnancy due to the risk of Listeria.

The following groups should be advised to take vitamin D supplementation:

- All pregnant and breastfeeding women should take a daily supplement containing 10 µg of Vitamin D
- All children aged 6 months - 5 years. Babies fed with formula milk do not need to take a supplement if they are taking more than 500 ml of milk a day, as formula milk is fortified with

vitamin D
- Adults >65 years
- "People who are not exposed to much sun should also take a daily supplement"

Testing for Vitamin D Deficiency

- The key message is that not many people warrant a vitamin D test. The National Osteoporosis Society (NOS) guidelines specify that testing may be appropriate in the following situations:
- Patients with bone diseases that may be improved with Vitamin D treatment e.g. known osteomalacia or Paget's disease
- Patient with bone diseases, prior to specific treatment where correcting vitamin deficiency is appropriate e.g., prior to intravenous zoledronate or denosumab
- Patients with musculoskeletal symptoms that could be attributed to vitamin D deficiency e.g. bone pain? Osteomalacia
- Patients with osteoporosis should always be given calcium with vitamin D supplements to testing is not considered necessary. People who are at higher risk of Vitamin D deficiency (see above) should be treated anyway so again testing is not necessary.

Vitamin A (retinol)

- Vitamin A is a fat-soluble vitamin

Functions

- Converted into retinal, an important visual pigment
- Important in epithelial cell differentiation
- antioxidant

Consequences of Vitamin A Deficiency

- Night blindness
- Vitamin A is *teratogenic in high doses*, and *pregnant women should not exceed a daily intake of >10,000 JU* Women are therefore advised to avoid any supplements containing vitamin A, such as normal multivitamin tablets, in pregnancy (NHS Choices). However, as supplements in the UK are now limited to a maximum Vitamin A content of 6,000 IU, if they have been taking one it should not be cause for concern. Pregnant women are also advised to avoid eating liver, as it has high levels of Vitamin A.

ABNORMAL PUERPERIUM

Puerperal pyrexia including:

- Puerperal sepsis
- Breast problem
- Bowel problem
- UTI and others
- Thrombophlebitis
- Wound infection
- Psychological upset

PUERPERAL PYREXIA

- 100.4 °F within 14 days after confinement or miscarriage and termination of pregnancy

Causes OF puerperal pyrexia

- **Genital causes**
  - genital tract infection
- **Extra-genital causes**
  - urinary tract infection
  - breast engorgement/infection
  - wound infection
  - respiratory tract infection
  - intercurrent febrile illness
  - thrombophlebitis

Puerperal sepsis (genital tract infection)

- Infection of the genital tract after confinement or miscarriage and termination of pregnancy

Aetiology

- Sites of infection
  - **Placenta site:** raw area -uterine wall
  - **Wounds:** cervix, perineum Bacteriology
  - **Endogenous:** Coliforms, Enterococci (*Strep faecalis*) Chlamydia, GC, *Clostridium perfringens*, Anaerobic streptococci, Bacteroides
  - **Exogenous:** *Haemolytic streptococci* (Group A), *Staphylococcus aureus*

Pathology (classification)

- Mild infection
  - infection localized (birth canal, placental site)
- Moderate infection
  - salpingitis
  - pelvic cellulitis -pelvic peritonitis - pelvic abscess
- Severe infection
  - general peritonitis
  - septicemia

Severity of disease

- depend on virulence of organisms, resistance of patient, amount of trauma, resultant dead tissues, appropriate antibiotic treatment, effective blood supply of infected area.

Clinical features

- Fever - may appear within 24 hours - abrupt, step-like, rigor
- Pulse - increase
- Headache, backache
- Lower abdominal pain - Signs of inflammation of pelvic peritoneum
- Tender uterus and adnexa- Signs of inflammation of pelvic peritoneum
- Distension
- Vomiting } in general peritonitis
- Diarrhoea

Diagnosis

- Fever - 24hr after delivery or miscarriage and termination of pregnancy
- Delayed involution of uterus
- Infected wound - laceration, episiotomy
- Lochia - offensive
- Induration of parametrium

Investigation

- Midstream Urine for C & S
- High vaginal swab for C & S
- Full blood count
- Blood culture if septicemia suspect: rigor / high temperature
- USG for retained products of conception (RPOC), fluid collection in pelvic cavity.

Prevention

- VE - sterile gloves (during labour)
- Adequate aseptic precautions
- Reduce trauma at delivery
- Personal hygiene
- Prophylactic antibiotics - Caesarean section (CS), Premature rupture of membrane (PROM)

Treatment

- **REFER** for Admission
- Good nursing care
- Adequate fluid intake
- Analgesics for pain
- Sedation for rest
- Correct anaemia - (Hb%-? Blood transfusion)
- Antibiotics - according to C&S
- STO - if infected perineal wound

Surgical treatment

- Exploration of uterine cavity if there are retained pieces of placenta
- Incision & drainage (POD), Posterior colpotomy if there is pelvic abscess
- Laparotomy and Drainage of pus
- Total or subtotal Hysterectomy

BREAST PROBLEMS

- Multi-factorial
- Present with feeding problems (common)

Feeding problems

- D/t combination of physical & psychosocial factors
- Cause tremendous stress and anxiety to mother & her family

Management

- counseling (sensitive issue)
- careful h/o to establish source of problem
- close attention to feeding technique & support

Sore nipples

- No evidence to support limiting suckling time.
- ***Optimal attachment & positioning is effective.***
- Removing baby from breast & nipple shield have negative effect on lactation.

Milk engorgement

- Pain and tender breast,
    - usually occur on day 3-5 of puerperium.
    - Rarely occurs with good feeding technique
- *Milk expression* can relieve the condition.

Advice

- to use warm compress and warm shower before feeding
- to support with binder or brassiere after feeding
- to use cold compress to reduce swelling and pain
- Encourage her to feed frequently.
- Give analgesia (paracetamol) if necessary.

Mastitis

- Cause - milk stasis from engorgement
- Typically localized to one breast, confined to one lobe (often upper-outer quadrant)
- Symptoms- extreme malaise, flu-like symptoms, muscular aching
- Treatment (Local);
    - Hot & cold compress, gentle hand expression
    - Analgesics, Antipyretics
    - Advise to rest but not to restrict feeding, support breasts.
    - Antibiotic therapy is rarely necessary (most cases are non-infective, benign and self-limiting)

Infective mastitis

- should be diagnosed by microbiological techniques

- Antibiotics -Fluclox 500 mg qid (according to C& S) and Ibuprofen 400 mg tds and pm
- Prolonged treatment (10 - 14 days) to prevent recurrence.

Breast abscess

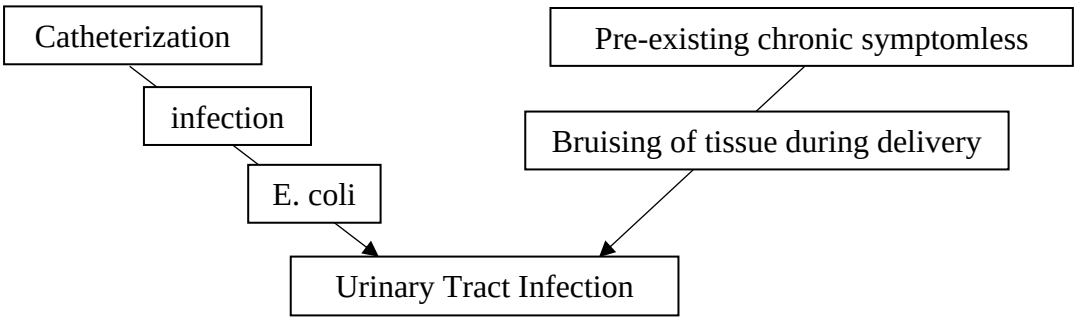
- Incision and drainage
- Antibiotics

Insufficient milk supply

- Most cases are perceived insufficiencies
- Teach proper attachment
- Good information and psychological support

URINARY TRACT INFECTION

- Commonest cause of puerperal pyrexia



Clinical Features

- Symptoms - Dysuria, frequency, urgency
- Signs - Fever with chills & rigors

Diagnosis

- Urine RE - Pus cells+++
- MSU for C & S - Colony count >100,000/ml

Treatment

- If history of UTI (+), give prophylactic antibiotics
- Fluid intake - not <3L/24 hour
- Give appropriate antibiotics according to C&S results

URINARY RETENTION

- Risk factors are prolonged labour, caesarean section (epidural analgesia), etc.
- Over-distension of bladder can lead to detrusor instability.
- Should encourage micturition.
- No women should be allowed more than 6 hours without voiding.
- Document urine void within 6 hours.

STRESS INCONTINENCE

- Post common urinary incontinence
- Can persist for months or even years
- Can affect physical, psychological and social well-being
- *Pelvic floor exercises* appear to be effective
- Referral to physiotherapist is recommended

DETRUSOR INSTABILITY

- 2nd most common urinary incontinence
- Avoid caffeine
- Physiotherapy
- Medical & surgical treatment

VESICOVAGINAL FISTULA

- Continuous leakage of urine
- Risk factors are prolonged and difficult labour
- Refer

BOWEL PROBLEMS

CONSTIPATION

- Common in immediate post-partum days
- d/t reduced dietary intake, perineal trauma and inactivity

Treatment

- encourage high-fiber diet and adequate fluid intake and laxatives

Complication

- can cause acute anal fissure

HAEMORRHOIDS

- dietary advice, fecal softener and topical application of cream (proctosedyl), ice packs can relieve

ANAL INCONTINENCE

- appropriate management of 3rd & 4th degree perineal tears

PERINEAL PAIN AND DYSPAREUNIA

- Associate with mode of birth, trauma and method of wound closure
- If signs of infection and inadequate wound repair or breakdown---- need to investigate
- Pain killers, local anesthetic gel or ice packs, cooling gel pads ----- effective
- Information and advice to couples how to reduce soreness on penetration e.g. use of lubricating gel

THROMBOPHLEBITIS

- 4^{th} – 10^{th} day
- Can be superficial (tender varicose vein) or associated with deep vein thrombosis (calf vein)
- Can lead to embolization to lungs and other sites

Treatment

- Exclude DVT and refer
- Encourage - bed-rest, elevation of foot-end, icepack,
- Recovery usually occurs within a few days
- Give pain relief, Antibiotics, local Anticoagulant (heparin gel)
- Ambulation

WOUND INFECTION

- CS wound – l in 12 infected
- Prophylactic antibiotics can prevent wound infection

Signs of infection

- redness, tenderness, serosenguinous discharge & purulent discharge
- Can lead to wound dehiscence & burst abdomen

DEPRESSION AND PSYCHOLOGICAL PROBLEMS

POSTNATAL OR BABY BLUES

- 80% of women may experience the post- natal in **first** two week.
- symptoms are fatigue, short temperedness, difficulties in sleeping, depress mood and tearfulness

Treatment

- usually mild and resolve spontaneously in the majorities of the cases
- If 'baby blue' persists- treatment for PND is indicated

POSTNATAL DEPRESSION (PND)

- is a form of non-psychotic postnatal depressive illness, peak -12wk after delivery
- mild to moderate severity

Risks

- Depression during pregnancy A bad birth experience
- Social problems (e.g. poor social support, financial problems)
- Past medical or family history of depression or postnatal depression Alcohol or drug abuse

Treatment

- keep women with early onset PND in close review, check thyroid function test (TFT) (presenting with tiredness)
- avoid overlooking as severe psychiatric illness
- give emotional support

- treat with antidepressants SSRI sertraline 50 mg od
- **REFER** if suicidal or harm to the baby

PUERPERIAL PSYCHOSIS

- Risks factors are previous history puerperal psychosis, severe non-postpartum depressive illness and family h/o of bipolar disorder/affective psychosis.
- Characteristics symptoms are restless agitation, insomnia, perplexity, confusion, delusions, hallucination, failure to eat and drink, thoughts of self-harm, depressive symptoms (guilt, self-worthlessness, hopeless), loss of insight

Treatment

- include acute treatment with neuroleptics (risperidone, haloperidol)
- REFER to hospital

OTHER PROBLEMS

- Fatigue
- Headache
- Anaemia
- Musculoskeletal problems (backache, etc.)

CIRCULATORY PROBLEMS

- Varicose veins

Reference

1. *Obstetrics and Gynaecology Management Guidelines, 1st Edition (2015),* O&G *Society, MMA*
2. *Oxford handbook of General Practice, 4[1] Edition*

POSTNATAL CARE

Definition

- Postnatal period begins immediately after the birth of baby and extends up to six weeks after birth during which the maternal systems especially the pelvic organs more or less return to pre-pregnant state.

PHYSIOLOGICAL CHANGES

TEMPERATURE (Elevated temperature)

- may be normal finding for first 24 hours.
- may be sign of dehydration, infection.

PULSE

- rises for few hours after normal delivery.
- should return to normal by 2nd or 3rd day.

Tachycardia

- infection, haemorrhage, pain, anxiety.

Bradycardia

- may be normal finding

BLOOD PRESSURE

- ***Elevated Blood Pressure*** due to pregnancy induced hypertension
- ***Lowered Blood pressure*** due to orthostatic hypotension or shock

POSTPARTUM CHANGES IN GENITAL TRACT

UTERUS

- Contraction and retraction continue to occur after birth.
- Discomfort is greater in multipara. Contraction is necessary for controlling bleeding and involution. Placenta site begins healing immediately by vasoconstriction and thromboses. It takes about 6 weeks to completely regenerate.

Involution of uterus

- Involution: returns to non-pregnant state by contraction and retraction of uterine muscle
- Uterine muscle → autolysis → peptone (in urine)
- Level of uterus: Immediately after delivery at umbilicus
- Postpartum 10th day at symphysis pubis (pelvic organ)

Height of the fundus of the uterus

- immediately after delivery - umbilical level
- postpartum 10th day - unable to palpate abdominally as becomes the pelvic organ
- 6th week postpartum - returns to normal size

Delayed involution of uterus (causes)

- Infection
- Retained pieces of placenta

- Fibroid
- Multiple pregnancy

LOCHIA

- is a postpartum uterine discharge
- lasts for 3-4 weeks of puerperium
- is alkaline, have a peculiar odour
- **Contents** –
    - decidual debris, vaginal epithelium, peptones, bacteria, cervical discharge
- **Types of lochia** (3-7days for each type)
    - Lochia rubra - red colour, blood, blood clot
    - Lochia serosa -pink colour, blood, WBC
    - Lochia alba - white colour, WBC, fibrin, mucous
- **Persistent red lochia** suggests delayed involution.
- Offensive lochia + pyrexia + tender uterus suggest infection.

CERVIX

- By 18 hours after birth, it has shortened and regained pre-pregnancy shape.
- Lower segment remains thin & fragile for several days.
- Os remains open for about 2 weeks.
- Center of opening is no longer round but a horizontal slit.

VAGINA & PERINEUM

- Vaginal rugae are flattened by delivery but reappearing by week 4.
- Introitus with good hygiene healed by week 2.
- Episiotomy is the same as any wound and healed by week 2.
- Haemorrhoids decrease in size during the week of postpartum.

HORMONAL CHANGES

- Most hormones return to pre-pregnant level by week 2 unless lactating.

CARDIOVASCULAR SYSTEM CHANGES

- Blood pressure decreases until 3-4 wks.
- Cardiac output takes about 60 minutes to return to normal.

GASTRO-INTESTINAL SYSTEM

Constipation

- Common due to - interrupted food intake, dehydration during labour, lax abdominal muscle, perineal laceration, and episiotomy.
- Prevented by high fiber diet or bulk forming drugs (methylcellulose).
- If not act, then gives laxatives, suppositories, or enema.

URINARY SYSTEM

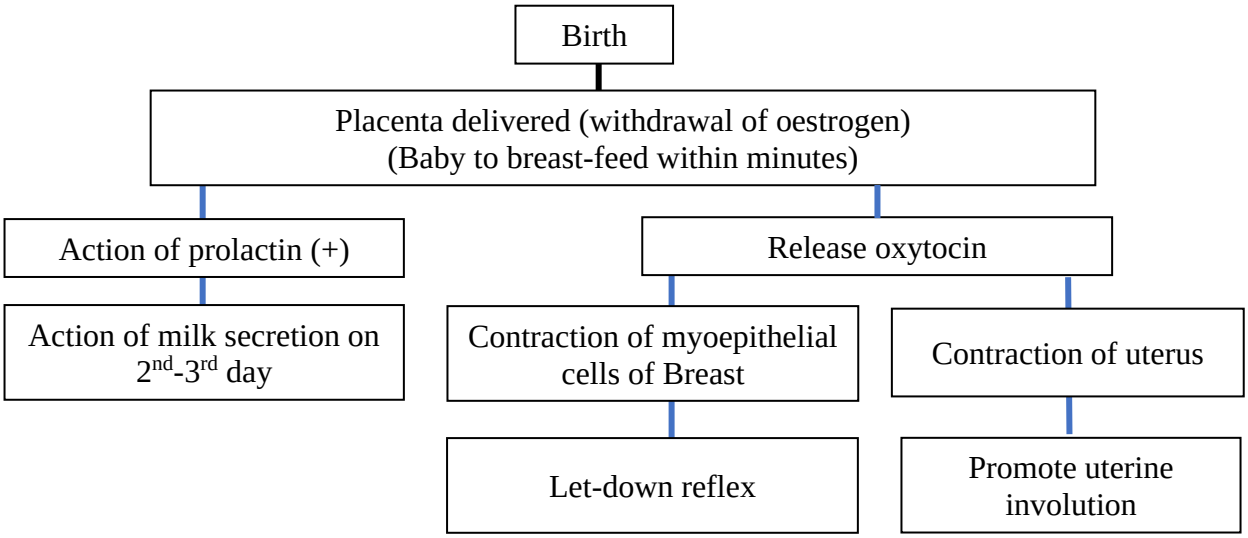
- Diuresis by 2nd or 3rd day
- Lactouria –Peptones in urine, by 2nd or 4th day
- Cystitis - *E. coli* is common organism; catheterization can predispose to infection; Retention of urine can be due to difficult labour & prolonged labour; pain resulting from bruising and laceration of vulva.

Incontinence of urine

- true incontinence/fistula stress incontinence
- Dilatation of ureters decreases by 2-8weeks post-partum

ONSET OF LACTATION

- colostrum can be expressed from 16 weeks of pregnancy till 2nd post-partum after which replaced by milk.
- milk production is initiated by prolactin from anterior pituitary but action 1s suppressed by estrogen before delivery.
- milk ejection or let-down reflex is stimulated by oxytocin from posterior pituitary.



HAEMATOLOGICAL SYSTEM

- Haemoglobin level is stable by 5th day.
- WBC reduced to 10,000/cumm.
- Platelet is increased by 4th to 10th day.

History taking and physical examination

- Personal identification, h/o present pregnancy, h/o present delivery
- Place of delivery
- Accoucheur
- Date and time of delivery
- Mode of delivery
- Duration of first stage: (from onset of labour pain to onset of urge to push)
- Duration of 2nd stage: (from pushing to delivery of baby)

- Duration of 3rd stage: (from delivery of baby to delivery of placenta and membrane)
- Any complication and any intervention during 1st stage, 2nd stage and 3rd stage of labour process
- Baby's condition
- H/o puerperium & h/o present illness
- assess discomfort, assess whether she can sleep well, assess appetite, assess the bowel, bladder function, assess breastfeeding.
- Menstrual h/o Marital h/o
- **Past Obstetric h/o**
- **Past Medical & Surgical h/o Gynaecological h/o**
- **Family h/o, Personal h/o, Social h/o, Drug h/o**
- **Physical Examination**
    - Assess general condition
    - Temperature, Pallor (anaemia), oedema, dyspnoea, CVS, Respiration
    - Breast
        - Can be soft, firm, lumpy Secretion of colostrum
        - Engorgement? Signs of inflammation?
        - Assessment of nipples for retraction, crack and fissures
    - Abdominal examination
        - Uterus - Fundal height: inches below umbilicus, symphysio-fundal height in cm, tenderness (+/-)
    - Perineal Examination
        - Lochia- amount, color, smell Episiotomy wound and perineal tear, assessment for haematoma,
        - signs of inflammation/ infection, suture line
    - Roman's sign - assessment for thrombophlebitis (swelling, redness, warmth, pain) Unilateral finding is more suspicious
    - C/S cases are at higher risk.

For patient who had epidural

- Assessment of lower extremities for sensation movement
- Remains on bed rest

For patient who had undergone caesarean section

- Additional assessment: incision, fluid intake, bladder & bowel, ambulation/orthostatic hypotension, thrombophlebitis

Documentation of finding is important.

Management

AIMS OF MANAGEMENT

- To monitor and promote the health of mother
- To facilitate the mother and other family members to care baby safely and confidently
- To establish proper breast feeding
- To enable the mother and her partner to develop their parenting skills
- To prevent the complications

Give information on:

- daily lifestyle (nutrition, ambulation, exercise, rest & sleep, bathing)
- ambulation as soon as possible
- breast feeding within half an hour

- application of self-care techniques such as taking gentle exercise, taking time to rest, having help to care for baby, personal hygiene.

Give advice on:

- Diet: Full balanced diet (fruits & vegetables, more proteins)
- Adequate intake of fluid (not excessive)
- Sleep: night (8 hours), afternoon (2 hours)
- Care of Perineal stitches
- Carry out assessment of perineum.
- Assessment of lower extremities for sensation movement Remains on bed rest

For patient who had undergone Caesarean section

- **Additional assessment:** incision, fluid intake, bladder & bowel, ambulation/orthostatic hypotension, thrombophlebitis
- **Documentation of finding** is important.
- If perineal pain is present, evaluate signs and symptoms of infection, inadequate repair or wound breakdown.
- Wash with soap and water dried apply dry sterile vulval pad (change frequently)
- STO on 5th day if non absorbable suture was used.
- **Bowel (for LSCS):**
    - Assessment for signs and symptoms of peritonitis esp. in prolonged labour
- **Bladder**
    - Assessment for bladder distension
    - May need catheterization if not able to void urine after 6 hours.
    - Measure Urine Output.
- **Breast feeding**
    - Assess effectiveness of breastfeeding and care of breast.
    - Offer information about how to hand-express their breast milk.
- **Mental Health & Emotional status**
- Many new adjustments have to be made.
- Mothers are frequently tired and can have labile emotion.
- Lack of support can exacerbate tiredness, feeling of sadness.
- **Emotion** can be affected by
    - unanswered questions about the labour.
    - attention shifting from mother to baby.
    - anxiety about parenting competence.
    - baby crying more than expected.
- Assess the patient whether there is any abnormality or complication Treat accordingly if present.
- **Give iron tablets for 3 months if anaemia is present.**
- **Before discharge, give information on**
    - Promoting health of both mother and baby.
    - The physiological process of recovery after birth.
    - Normal pattern of emotional changes (within 3 days of delivery).
    - Recognition of **common health problems** such as baby blues, perineal pam, discomfort, offensive odour or dyspareunia, headache, persistent fatigue, backache, constipation, haemorrhoids, faecal and urinary incontinence, urinary retention.
    - Recognition of signs and symptoms of **life-threatening conditions** such as sudden and profuse blood loss, change in consciousness, fever, chill and rigor, abdominal pain, severe persistent headache, raised blood pressure, breathlessness or chest pain, unilateral calf pain, redness and swelling.
    - To contact breast feeding support groups if there is any breastfeeding problems.
    - Information on perineal hygiene, methods and timing of resumption of contraception

- Postnatal exercise- breathing, abdominal and pelvic muscles, and legs.
- Advice for postnatal checkup at 6 weeks after delivery.

FAMILY PLANNING (BIRTH SPACING)

Contraceptive advice:

- Inform and counsel about various methods of contraception, its efficacy, and side effect, its effect on breast feeding, impact on future fertility.

Various methods:

- Natural method including Lactational Amenorrhoea Method (LAM).
- Barrier method e.g., condom
- Hormonal method
- Injection Depo-provera (Methoxy progesterone acetate)
- Progestogen only pill (POP)
- Combined oestogen, progestogen containing pill (COC)
- Intrauterine contraceptive device (IUCD)
- Progestogen containing implant
- Sterilization
- *LAM is only effective **if** exclusive breast feeding is applied and patient has amenorrhoea.*
- *Progestogen containing contraception is suitable in breastfeeding mother.*
- *COC should be avoided in first 6 month.*

CONTRACEPTION

CONTRACEPTION

Intentional prevention of conception or impregnation through the use of various devices, agents, drugs, sexual practices or surgical procedures.

FAMILY PLANNING

A program to regulate the number and spacing of children in a family through the practice of contraception or other methods of birth control.

BIRTH SPACING METHODS

Permanent Methods	**Temporary Method**
Male (Vasectomy) & Female (Tubal Ligation) sterilization	Natural Methods - Lactational Amenorrhoea - Calendar Method, etc. Hormonal Methods - COC, POP, Injectables, ECP, Norplant, IUS Non-hormonal Methods - IUD, Male and Female condoms, Spermicides

Contraception

- A woman's choice of contraceptives methods should be informed one, and should be based on knowledge of the various options available to her.
- A combination of good counseling and adequate skill on the part of the provider is required.
- The provider must be able to explain the characteristics of the contraceptives.
- Six steps in counseling the clients
    - G = greet client
    - A = Ask client about themselves
    - T = Tell clients about choices
    - H = Help clients make informed choice
    - E = Explain how to use chosen method
- R = Return visits should be welcome Not Abortifacient!! ***No abortifacient!***

COC	**POP**
Composition	
• Contain estrogen & progestin • Standard =.05mg ethinyl estradiol and progestin(C5) • Low dose =ethinyl estradiol 0.03 mg and levonorgestrel (*2nd generation*) 0.15 mg in each tablet- 21+ placebo 7 tablets (microgynon) • Ethinyl estradiol 0.03mg and desogestrel (*3rd generation*) 0.15 mg in each tablet+ placebo 7 tablets (marvelon) 99% effective	• Contain very small amount of Progestin only Lynestrenol 0.5mg -28 active hormone pills (Exluton) • 97% effective if taken according to instructions

How they work?	
• Inhibit ovulation (effect of estrogen and progesterone centrally) • Prevent Implantation (local effect of progesterone) • Thickening of the cervical mucus (local effect of progesterone) • * Not disrupt an existing pregnancy	
Advantages	

• Highly effective
• Safe, reversible
• Fertility returns soon after discontinuing (approximately 3 months)
• Non contraceptive benefit:
  • Improve premenstrual syndrome, acne
  • Reduce risk of ca ovary and ca endometrium, Ovarian and Breast cysts, Fibroids & Iron Deficiency anaemia pelvic inflammatory disease
• Regulates monthly periods
• Less risk of ectopic pregnancy
	• Breast feeding women can use
	• No estrogen side effect so can use in old age, DM, CVD risk
	• Relieve dysmenorrhoea
	• Highly effective during Breast feeding
	• Prevent benign breast dis, endometrial & Ovarian Ca, PID

Disadvantages	
• Client dependent • Regular, daily use • To take at about the same time every day • No protection against STI & HIV	
• Not appropriate choice for lactating Mothers • Minor side effect usually common in 1st 3 months of use and irregular use include spotting, nausea, • amenorrhoea, breast tenderness, headache or weight gain	• Few hour late - increase the chance of Pregnancy • Missing 2 pills - greatly increase the chance of Pregnancy • Changes in menstrual bleeding among non-Breastfed women • More expensive
Timing	
• Take the first pill on the first day of period. • Continue taking one pill every day, in the order shown as arrow on the packet • Take with food. • Start the next packet straight away when finished the first packet	• Take the first pill on 1st day of menstrual period • At the same time • (e.g.,: Between 6 to 8 pm evening mealtime) • Start the next packet when finished the first packet • Do not miss a day

Hormonal method (oral)

What to suggest if client missed pill (COC)

- If she misses 1or 2 pills,
  - the client should take it as soon as she remembers.
  - Take the next one at the regular time.
- **IF SHE FORGETS TO TAKE TWO OR THREE PILLS, SHE SHOULD DO THE FOLLOWING (COC)**
- If she misses the two or three pills in **1st week**,

- take one missed pill as soon as she remembers and then continues to take regular pills regular time.
- Need EMERGENCY pill if unprotected sex, and
- Use back up method (condom) for 7 days at the same time.

- If 3 or more pills are missed in **2nd week**,
  - needs to use condoms for 7days
- **IF SHE MISSES 3 OR MORE PILLS OF 3rd row (7 PILLS) (COC)**
  - Take one missed pill as soon as remember
  - Take the remaining pills of the third row at regular time
  - After completion of third row, not to take the remaining pills of the fourth rows and start a new packet
  - At the same time, use back up method (condom) for 7 days
- **IF SHE MISSES THE PILLS OF THE LAST LINE (4th row) (COC)**
  - Throw away the missed pills.
  - Continue to take the remaining pills as in order

Absolute contraindications to COC

- Breast feeding <6wks postpartum
- Smoking >15 cigarettes/day or more cigarettes and age over **35**
- Multiple risk factors for CVD
- Hypertension >160/ 100 mmHg or more
- Hypertension with vascular disease
- Current or history DVT/pulmonary embolism
- Major surgery with prolong immobilization
- Known thrombogenic mutation
- Current or history of IHD, stroke
- Complicated valvular heart disease
- Migraine with aura
- Migraine without aura and over 35
- Current breast cancer
- DM (>20yr) with severe vascular disease or with nephropathy, retinopathy, neuropathy
- Active viral hepatitis
- Severe cirrhosis
- Benign or malignant liver tumours

COC/POP with special situation

- IF POP commenced after day 5, it takes 2 days to get protection.
- IF switching from COC, give immediate protection if take day 21 of COC
- Concurrent antibiotic use - precautions should still be taken with enzyme inducing antibiotics (e.g., rifampicin)
- For women taking phenytoin, carbamazepine, barbiturates, primidone, topiramate, oxcarbazepine
- If missed pill <3 hours, continue as normal
- If >3 hours, take missed pill as soon as possible, continue the rest of pack, use condoms for 2 days (diarrhoea and vomiting assume missed pill)

Hormonal method (injectable)

3 **month injection (DMP**A)	**1 month injection** (CIC)
- Depo- medroxyprogesterone acetate	- Combined injectable contraceptive - 2 main types * (approved by WHO) - Natural Estrogen Estradiol (NEE) Cypionate 5 mg & DPMA 25 mg - NEE Valerate 5 mg & progestin norethisterone enanthate 50 mg (OK 1)
Composition	
- 150 mg of synthetic progestin	- Progestin & Natural estrogen
How they work	
- Inhibit ovulation - *(at least 12 weeks)* with DMPA - Inhibit implantation - Thickening of the cervical mucus	-
Advantages - Highly effective - Safe, private, confidential & easy to use - Completely reversible	
- Weight gain - Who stop DMPA - 4 months longer than usual to become pregnant.	-
Instruction	
- 1st to 5th days of Period - Any other time – use back up method for 7 days - Do not message/ rub injection site - Can give if she is not pregnant	
Next injection	
- 12 weeks - -Up to 4 weeks early - -Up to 2 weeks late	- 30day +/- 3days
Side effects	
- Weight gain 8lbs in first year - Unexpected bleeding/spotting Breast tenderness - Delay in return of fertility - Headaches - amenorrhoea - increased risk of osteoporosis - Depression / dizziness Nausea	-
When to return	
- If she has questions/problems - Heavy vaginal bleeding - Excessive weight gain - Headaches - Severe abdominal pain - danger of ectopic pregnancy - Chest pain / Shortness of breath - Severe headaches (with blurred vision) - Swelling / Severe pain in one leg	-
If irregular bleeding: • *Give one of the following -* • COC • NSAID - Ponsten 500 mg tds • Antifibrinolytic - Azeptil 500mg tds • Capillary stabilizer - K stat 500 mg tds	-

SUMMARY

- Estrogen & progestin - COC, CIC
- (Main difference is presence of a natural estrogen in CIC versus a synthetic estrogen in COC)
- Progestin only - POP, DMPA
- Time until effective (if not first day period)
- -instant: IUD 2 days: POP
- 7 days: COC, injection, implant, IUS

INTRA-UTERINE CONTRACEPTIVE DEVICE (IUCD)

Types:

Cu T380, Multiload 375, Mirena

- Copper bearing devices
- Hormone releasing IUD
- Prevent fertilization and implantation, inhibit sperm transport
- Extremely effective - 99%

Long term use- Cu T380

- 10 years, gold standard of Cu

IUDs Multiload 375

- 5 years
- Insert during menstrual cycle, post-abortion, 4-6 weeks post-partum
- Reversible

Composition

- Polyethylene body
- A copper wire wound around the stem A monofilament nylon thread Polypropylene inserter tube
- Sliding polyethylene measuring ring Multiload Cu 375 SL- 29*21mm For 5 to8mm uterine length Recommended in-situ time -5 years Low expulsion rate
- Low rate of removal for bleeding and pain

How they work

- inhibit sperm transport
- Inhibit fertilization than implantation
- Sterile inflammatory foreign body reaction in endometrium Sperms frequently absent in upper female genital tract
- Low rate of recovery of ova from fallopian tube

Contraindication

- Current acute or chronic genital tract infection Known or suspected pregnancy
- Abnormal uterine bleeding of unknown origin Confirmed or suspected malignancy of genital tract Certain uterine abnormalities
- Assess with special consideration in nulliparity for future fertility

Timing for insertion

- Anytime during menstrual cycle

- Better within 2 weeks after the start of last period Immediately after birth
- 6 weeks after delivery
- Up to 5 days after unprotected coitus

Complication

- Pelvic discomfort Low back pain Uterine cramp
- Fainting with insertion Uterine perforation
- Increased risk of PID within first 20 days Expulsion
- Unexpected pregnancy following poor insertion

Follow-up

- Advise to check the thread in vagina once a month
- In early months, attention should be paid for expulsion and displacement Any delay in period or abnormal discharge should be check
- Any problems at any time

Removal

- Any time during menstrual cycle Severe pain
- Excessive bleeding Wish to have pregnancy
- Remove by gentle traction on the thread with forceps

HORMONAL IMPLANTS (NORPLANT, IMPLANON, JADELLE)

- Implants are placed in the body which release hormone that prevents pregnancy Inserted in simple 15 minutes outpatient procedure
- Elastic capsules, the size of paper match sticks, inserted under the skin in the arm 99.95% effectiveness rate

Norplant	Implanon	Jadelle
Side effect-same as Depo-Provera	Single rod implant 4 cm in length, 2mm diameter Control release of etonogestrel Insert subdermally in the medial aspect of upper arm	2 thin flexible capsules filled with levonogestrel
6 capsules- 5 years 2 capsules- 3 years	Remove after 3years	Up to 5 years
How they work - Suppress ovulation - Decrease tubal mortality - Change endometrium - Thicken cervical mucous		- Suppress ovulation - Decrease tubal mortality - Change endometrium - Thicken cervical mucous - Do not effect breast feeding - Rapidly effective <24hrs - Immediate return fertility on removal
Contraindication - Liver Infection, liver tumor - Current Venous thromboembolism (VTE) - Un explained vaginal bleeding - Current on past h/o Ca breast - Medication for seizure/TB		**Contraindication** - Liver Infection, liver tumor - Current VTE - Un explained vaginal bleeding - Current on past h/o Ca breast - Medication for seizure/TB
Side effects		Changes in bleeding pattern

BARRIER METHODS

- Male condoms, Female condoms

	Male condom	Female condom
Composition	A rubber sheath (latex, polyurethane)	A loose plastic sheath (polyurethane)
	Cheap Barrier that prevents sperm and infections form entering vagina	More expensive Barrier that prevents sperm and infections form entering vagina re expensive
How to use	-Open package carefully -Place condom on tip of penis with rolled rim facing away from body -Unroll condom all the way to base of penis -After ejaculation, hold rim of condom so it will not slip off and withdraw penis from vagina while still erect -Throw away used condom properly	-Open package carefully -Make sure the condom is lubricated -Choose a comfortable position -squat, raise one leg, sit or lie down Squeeze the inner ring at the closed end -gently insert inner ring into vagina -place the index finger inside condom, push the inner ring up as far as it will go -make sure outer ring is outside the vagina, condom is not twisted -to remove, twist the outer ring and gently pull -throw away condom properly
When to use	-Every time you have sex -If condom break, EC as soon as possible -Store away from direct sunlight -Check expiry date -single use only	Use a new condom for -each intercourse -insert before penis touches vagina -insert up to 8 hrs. ahead of time -sometimes need extra lubricant -after sex, take care about spillage of semen on to vagina

SPERMICIDE

- Most common is nonoxynol -9
- Available in creams, films, foams, gels, suppositories, sponges and tablets Best use with barrier methods
- Failure rate 6%
- Do not protect against STI and HIV

EMERGENCY CONTRACEPTION

Definition

- EC is any contraception, which is used after the potential time of implantation. It refers methods that can be used by women following unprotected intercourse to pregnancy.
- EC is a back-up method for occasional use, and should not be used as a regular method of birth control.

Method

- Emergency contraceptive pills
- Emergency IUD insertion

EMERGENCY CONTRACEPTIVE PILLS

	POP	COC
Composition	Levonogestrel 0.75mg (postinor, Ecee 2, pill72)	Levonogestrel 0.5mg+ethinyl estradiol 100mg
How they work	-By affecting movement of sperm through Cervical mucous -by affecting transport of sperm, ovum or embryo -by interfering with Ciliary function -by preventing fertilization -by inhibiting implantation	-By affecting movement of sperm through Cervical mucous -by affecting transport of sperm, ovum or embryo -by interfering with ciliary function -by preventing fertilization -by inhibiting implantation
How to use	One pill taken as soon as possible after unprotected sex, within 72 hour 2nd dose taken 12 hour after 1st dose	One pill taken as soon as possible after unprotected sex, within 72 hour 2nd dose taken 12 hour after 1st dose
Side effects	-Abdominal pain, vomiting,headache, dizziness, cramping, breast tenderness -Next period may be 1 week or late, if more than 1wk may be pregnant, do pregnancy test	-Abdominal pain, vomiting,headache, dizziness, cramping, breast tenderness -Next period may be 1 week or late, if more than 1 week may be pregnant, do pregnancy test
Contraindication	Known pregnancy No medical contraindication by WHO	Known pregnancy No medical contraindication by WHO
Effectiveness	95%- within 24 hours 85%- within 48 hours 58%- within 72 hours	74%-within 24 hours 36%- within 48 hours 31%- within 72 hours
When to start regular contraception after ECP use	-The day after she takes ECP -No need to wait for next monthly bleeding -New user, begin new pill pack -Continuing user, use as before -need to use back up method for first 7 days	

EMERGENCY CONTRACEPTIVE IUD INSERTION

Composition:

- IUD with banded copper on the arms, containing at least 380 mm2 of copper (The lowest failure rate and the first line choice)

When to use:

- Within 5 days of unprotected sex after exclusion of infection and pregnancy

How they work:

- The direct toxicity of copper ions on sperms inhibiting fertilization, because the copper in the endometrium inhibit implantation.

Complication:

- pelvic pain Abnormal bleeding Infection
- Expulsion and perforation
- Follow up for ECP users:
- Women should be advised to have pregnancy test if: her period is more than 7 days
- menstrual bleeding is lighter than usual
- she wants to use regular family planning method she needs some clarification about ECP use.

INFERTILITY

Definition

- Inability to conceive after 1-2 years of regular, unprotected sexual intercourse (not less than twice weekly)
- Primary infertility applies to a couple without a prior pregnancy.
- Secondary infertility is used when the couple has previously succeeded in achieving at least one pregnancy, including abortion and ectopic pregnancy.

Causes

- Male factor 30%
- Unexplained 20%
- Ovulation failure 20%
- Tubal damage l5%
- Other 15%

History

- History concerning about causes of male subfertility,
    - e.g. smoking, alcohol, undescended testes, varicose vein in the scrotum, or damage of genital tract from previous infection or operation to know factors that affect the production or transportation of sperm
    - h/o childhood mumps, erectile or ejaculatory problem.
    - Hereditary factor (no sperm or very low sperm count in some patients)
- History concerning about causes of female subfertility
    - e.g. irregular menstrual history (to know ovulatory disorders due to hormonal disturbances)
    - Symptoms suggestive of endometriosis or pelvic infection like dysmenorrhea, pelvic pam
    - history of operation, structural abnormalities of the uterus (for pelvic adhesion or blockage of fallopian tubes)
- female age (for aging)
- History of any coital difficulty- if present, to access if there is psychological or physiological

Investigation

For male:

- **Semen analysis:** abnormal result may be due to 'inaccurate collection of the specimen, or history of recent illness. To make a male factor subfertility - it is at least two abnormal samples collected on separate occasions at least 3 months apart are necessary.

For female:

- ask them to keep **menstrual calendar** for 2- 3 months to assess the possible time of the ovulation
- to **provide LH kit** and teach them how to use (to check with LH kits at the time of ovulation, usually between 10-14 days of menstrual cycle)
- ask them to observe the passage of **stretchable mucous** at the possible time of ovulation (10-14 days of cycle)
- check **USG** to detect the abnormalities of uterus or ovaries(the genital tract problem)

Treatment

If all the above tests are normal

- Let the couple try for 3 months General measures before undergoing treatment Advise them to
- Avoid smoking in both couples
- Keep body weight normal (BMI 20-25) as significant overweight or underweight will cause difficulty to get pregnant.
- Have proper diet and exercise for optimal reproductive function.
- Prescribe folic acid
- Counseling:
- explain the couple about the chance of conception: that is 80% of couples in the general population will conceive within **1** year if: the woman is aged under 40 years and they do not use contraception and have regular sexual intercourse
- **explain about the frequency and timing of sexual intercourse:** vaginal sexual intercourse every 2 to 3 days optimizes the chance of pregnancy (to tell them - too frequent sexual intercourse, say once every night, may result in decrease in number of sperm in semen. On the contrary, too infrequent sexual intercourse, say less than once per week, may lower the motility of sperm. Both conditions may adversely reduce the chance of pregnancy)
- **advise** to maintain regular normal intercourse, say two to three times a week, with a slight increase in frequency (such as once every 2 days) around the time of ovulation.

Refer to OG

- *If above measures fail.*
- Normal semen results:
    - Volume >1.5 ml, pH >7.2
    - Sperm concentration >20 million/ml
    - Morphology >30% normal forms
    - Motility >25% progressive motility
    - Vitality >75% live spermatozoa

PREMENSTRUAL SYNDROME

- PMS- Symptoms present 1-14 days before menstruation (Luteal phase) and disappear at the onset or on the day of the heaviest flow. More than 150 symptoms are reported to be associated with premenstrual syndrome (PMS)
- History- patient may present with one or more of the following symptoms

Psychological and behavioural symptoms

Mood swings and depression	Tearfulness or feeling 'low'
Tiredness, fatigue or lethargy	Tension or unease
Irritability	Clumsiness/poor coordination
Difficulty in concentrating	Altered interest in sex
Sleep disorders	Food cravings
Aggression	Loss of self-control

Physical symptoms

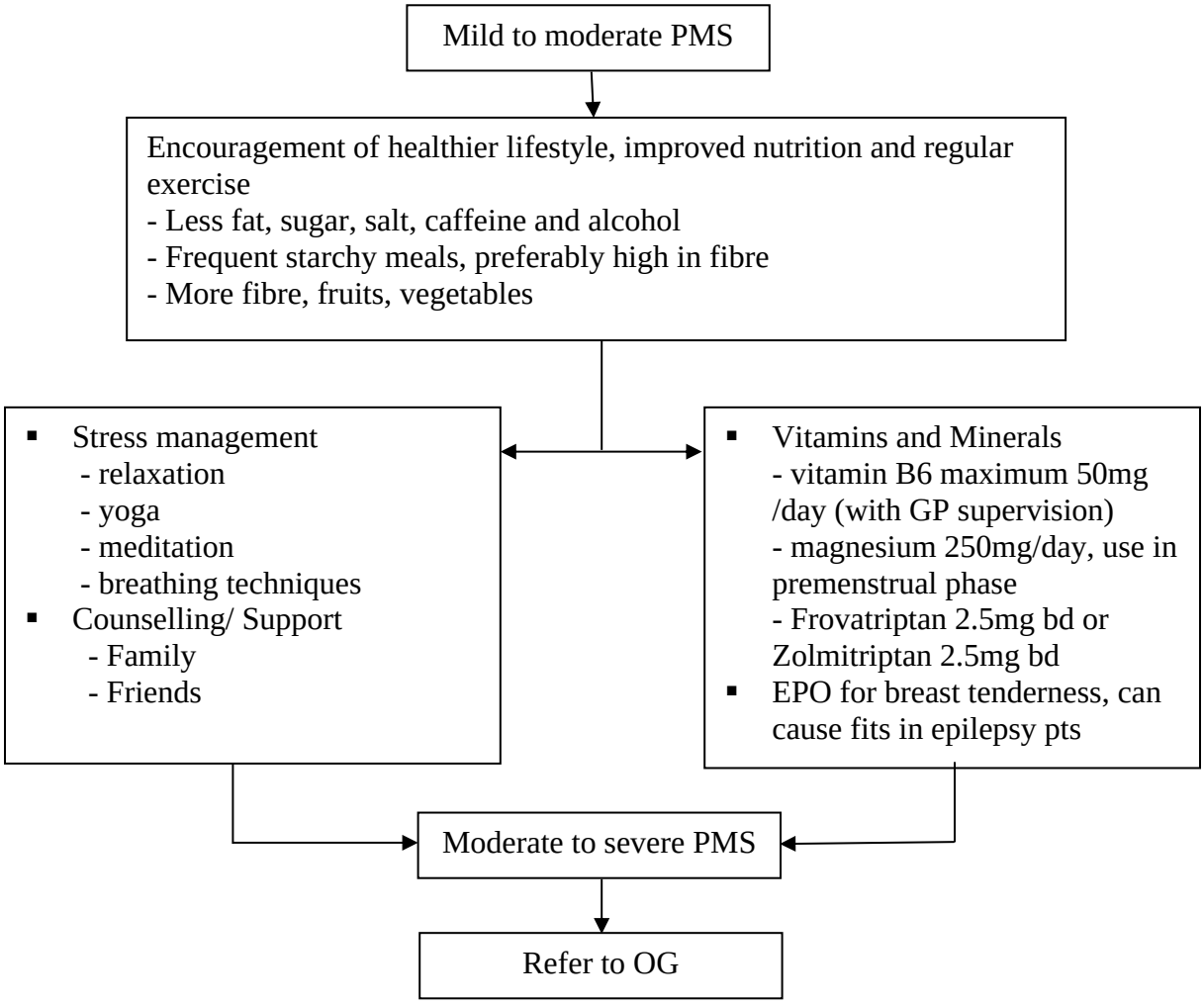
Breast tenderness	Swollen/bloated feelings
Puffiness of face, abdomen or fingers	General aches and pains, especially backache
Headaches	Weight gain
Appetite changes	Acne or other skin rashes
Constipation or diarrhoea	Muscle or joint stiffness
Exacerbation of epilepsy, migraine, asthma, rhinitis or urticaria	Abdominal pain/cramps

Diagnosis

- No lab test necessary
- Ask patient to keep the *menstrual chart at least for two cycles* to know- precise dates of menstruation and symptoms- the presence of symptoms before and their absence after menstruation gives a clue to diagnose

Treatment

- Symptomatic treatment only
- Wear loose clothes if bloated
- Adequate sleep and regular exercise
- Eat regularly
- Reduce fluid intake
- COC, SSRI, spironolactone, NSAIDS
- For all treatments try a 3-6 months trial.
- Ask women to keep a symptom diary.
- Be sure to FOLLOW UP- as the first treatment may not work.
- If symptoms are severe or primary management is ineffective → REFER.


Mild to moderate PMS
Encouragement of healthier lifestyle, improved nutrition and regular exercise
- Less fat, sugar, salt, caffeine and alcohol
- Frequent starchy meals, preferably high in fibre
- More fibre, fruits, vegetables
Stress management
- relaxation
- yoga
- meditation
- breathing techniques
Counselling/ Support
- Family
- Friends
Vitamins and Minerals
- vitamin B6 maximum 50mg /day (with GP supervision)
- magnesium 250mg/day, use in premenstrual phase
- Frovatriptan 2.5mg bd or Zolmitriptan 2.5mg bd
EPO for breast tenderness, can cause fits in epilepsy pts
Moderate to severe PMS
Refer to OG

MENOPAUSE

Definition

- Menopause is the permanent cessation of menstruation that results from loss of ovarian follicular activity, after one year of amenorrhoea.
- The climacteric is the period prior to the menopause where women may experience symptoms, as ovarian function starts to fail.
- Women >50 years of age - FSH level >30 IU/dl
- Women <50 years of age – 2 FSH levels of >30 IU/dl, taken a few weeks apart. Premature menopause - menopause before 40 years of age

History

- Age of menopause (to know early menopause or normal or late)
- If present with hot flush (i.e. vasomotor symptoms)
- ask severity, if troublesome at night or interfering with sleep, night sweat
- If symptoms suggestive of psychological effects - irritability, confusion, lethargy, memory loss, loss of libido, depression, insomnia
- Ask for onset, similar experience before to differentiate from other psychological causes
- If present with palpitation (CVS symptoms) o ask for duration, frequency
- Ask for any breast lump or previous history of breast disease, family h/o breast disease
- Ask for urogenital symptoms like urgency, stress incontinence, dysuria, frequency dyspareunia, vaginal dryness, itchiness, h/o PMB, vaginal discharge
- History of taking pap smear
- Any symptoms suggestive of arthritis, osteoporosis
- History of other co-morbid diseases like DM, hypertension

Examination

- General examination like Body weight, BP, CVS
- Breast examination- any palpable mass
- Abdominal examination- any mass
- VE- any discharge, dryness

Investigation

- Investigate as necessary only if there are co-morbid diseases like DM, Hypertension, IHD

Management

Alternative therapies to hormone replacement therapy (HRT)

Life style measures- advise them to

- take regular sustained aerobic exercise - walking, swimming, jogging (infrequent high impact exercise should be avoided as it can worsen the symptoms)
- avoid smoking, avoidance or limit caffeine intake to reduce the vasomotor symptoms
- reduce body weight in case of obesity
- Lighter clothing, less stress and avoiding triggers eg. spicy food
- beta-blocker if there is palpitation or tachycardia (contraindication in Asthma)

- diet and supplements- calcium, calcitonin, Vit D supplements, Soy beans, Ginger, tofu, dark green vegetables to prevent osteoporosis,

Complementary therapies-

- Evening Primrose Oil (EPO) for mood swings and breast tenderness (may potentiate seizures)
- psychological support and prescribe a 2 weeks trial of fluoxetine (20mg daily), citalopram (20 mg daily) or venalafaxine (37.5 mg twice a day) as necessary in insomnia
- vaginal dryness- advise to use moisturizer

For HRT

- Should not prescribe in primary care level and always refer to OG if HRT is considered in case of
    - Early menopause (to prevent osteoporosis)
    - If symptoms are distressing

Note

- It is recommended to use effective contraception until the diagnosis has been confirmed using:
- 12 months after the last period in women >50 years 24 months after the last period in women <50 years
- HRT adding a progestogen increases risk of breast cancer Unopposed oestrogen increase risk of endometrial cancer

VAGINAL DISCHARGE

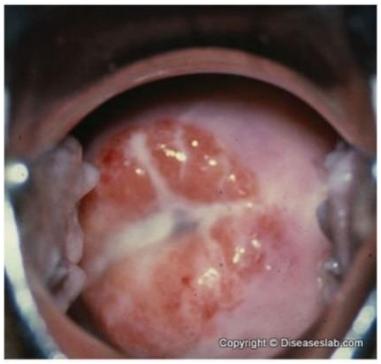
- Vaginal discharge is a common presenting symptom and is not always pathological.

Common causes

- **Physiological:**
  - e.g. COC, pregnancy, ovulation
- **Infective:**
  - Candida
  - Bacterial vaginosis
  - STI
  - Trichomonas vaginalis (Moniliasis)
  - Gonorrhoea
  - Chlamydia
- **Non-infective**
  - Ectropion
  - Foreign body
  - Cervical cancer

CANDIDIASIS (FUNGAL INFECTION)

- Fungal infection
- 20% of patients are asymptomic.



Predisposing factor

- Diabetes Mellitus
- Steroid treatment
- Immunosuppression
- Pregnancy
- Long term Antibiotics
- Cushing's or Addison's disease
- Chemotherapy or Radiotherapy
- Vaginal trauma
- Tight-fitting synthetic underwear

Presentation

- Pruritus vulva, superficial dyspareunia, dysuria,
- Vulva erythema, fissuring, satellite lesion
- Thick creamy non-offensive discharge

Examination

- cottage cheese discharge
- Sore vulva, crack or fissure

Investigation

- a swab from anterior fornix for C&S

Treatment

- The standard treatment is Clotrimazole vaginal tablet or pessary 500 mg x one night
- Econazole nitrate vaginal pessary 150 mg, 1 to 3 nights (can also be used)
- Oral treatment for vaginal candidiasis is rarely used because of side-effects .

RECURRENT VAGINAL CANDIDIASIS

Compliance

- Exclude differential diagnosis e.g. lichen sclerosis
- Exclude predisposing factors
- Induction- maintenance regime, with daily treatment of Fluconazole 150 mg every 3 days for 3 doses followed by 150 mg weekly for 6 months as maintenance treatment.
- *A single individual may have more than one STI simultaneously*

BACTERIA VAGINOSIS

- Vagina flora are changed from lactobacillus to anaerobes: *Gardnerella vagina/is*

Presentation

- *offensive, fishy grey/white, thin vaginal discharge*
- Vulva soreness (-)
- Cervix looks normal

Amsel's criteria (3 of following 4 points)

- Thin white homogenous discharge
- Clue cells on microscopy -stippled vaginal epithelial cells
- **Vaginal pH >4.5**
- Positive whiff test (addition of potassium hydroxide results in fishy odour)

Investigation

- high vaginal swab for C&S

Treatment

- Tablet Metronidazole 400 mg BD for 7 days (or)
- Tablet Metronidazole 2 gm single dose (or)
- Tablet Tinidazole 2 G single dose if patient is tolerable 70- 80% initial cure rate
- Relapse rate >50% within 3 months
- metronidazole 0.75% gel 2 times / wk x 4-6 months
- Clindamycin 2% cream PV daily x **1** week

Bacterial Vaginosis in Pregnancy:

- Increased risk of preterm labour, low birth weight and chorioamnionitis, late miscarriage

CHLAMYDIA

- Major cause of pelvic pain and infertility in women
- Incubation period 7-21 days

Screening

- Chlamydia is a preventable cause of infertility, ectopic pregnancy and pelvic inflammatory disease.

Presentation in Men

- Asymptomatic, urethritis

Presentation in Women

- Asymptomatic (70%), vaginal discharge (30%)
- Post coital or intermenstrual bleeding
- PID (10-30%)
- Dysuria

Examination

- Mucopurulent cervicitis, hyperaemia and oedema of cervix +/- contact bleeding
- Tender adnexa, cervical excitation

Investigation

- Nuclear acid application tests (NAAT) to confirm diagnosis.
- Chlamydia notification
- Symptomatic men: all partners from the 4 weeks prior to onset of symptoms.
- Women + asymptomic men: all partners from the last 6 months or the most recent partner

Management

- Tablet Azithromycin l G single oral dose (or)
- Tablet Doxycycline 100 mg twice daily for 7 days (or)
- Tablet Erythromycin 500mg 4 times a day for 7 days (or)
- Tablet Tetracycline 500mg 4 times a day for 7 days
- Tablet Ofloxacin 200 mg bd (or) 400 mg od for 7 days
- ***If pregnancy/breastfeeding (+):*** erythromycin 500mg qid for 2 weeks
- partner notification and treat both partner
- abstain from sex until 7 days after both partners were fully treated
- full sexual health screen is ideal.

GONORRHOEA

Symptoms and signs

- 50% asymptomatic
- Mucopurulent vaginal discharge (50%)
- Lower abdominal pain (25%)
- Dysuria (12%) but not frequency
- Intermenstrual bleeding +/- postcoital bleeding
- Pelvic or lower abdominal tenderness (<5%)
- No abnormal findings on examination

Management

- Partner notification (covering previous 3 months)
- Avoid sex until clear and partner has been treated.

- Injection ceftriazone 250mg IM (or) cefixime 400mg PO +Azithromycin 1G PO (for associated Chlamydia in 40% of women)

TRICHOMONIASIS

Symptoms and signs

- Asymptomatic (10-50%)
- Vaginal discharge (70%) -frothy yellowish discharge (10-30%)
- Vaginal itching
- Dysuria and lower abdominal pain
- Offensive odour
- Vulvitis and vaginitis
- Strawberry cervix (2%)
- No examination abnormalities

Investigation

- Direct observation under microscope of wet smear slide from posterior fomix

Management

- Avoid sex until both partners treated.
- Full sexual health screen (HBsAg, HCV, HIV, syphilis)
- Tablet Metro 400-500 mg bd for 7days (or) 2 gm single dose (or) Tinidazole 2 gm
- single dose
- Refer if resistant
- Trichomoniasis in pregnancy: preterm delivery, low birth weight

ITCHY VULVA (PRURITUS VULVAE)

- 'Pruritus vulvae' simply means itching of the vulva.
- The vulva is the area of skin just outside the vagina. Most women experience a slight vulval itch now and again. However, pruritus vulvae mean the itch is persistent and causes distress. The itch may be particularly bad at night and may disturb your sleep. About 1 woman in 10 sees a doctor about a persistent itchy vulva at some stage in her life. Vulval itching can affect any woman, at any age. It can lead to scratching and rubbing which can break the skin and can lead to soreness, bleeding and skin infections.
- An itchy vulva (pruritus vulvae) is a symptom, not a condition in itself It can be caused by many different conditions. Therefore, if you have a persistent itchy vulva, you should see your doctor to find out the cause.

Causes

- Causes of an itchy vulva tend to differ slightly between adults and children. However, they can include the following:

1. Infections
    - Thrush.
    - Threadworms.
    - Scabies.
    - Some sexually transmitted infections, such as trichomoniasis and genital warts.
2. Sensitisation of the vulval skin
    - Creams, including treatments for, for example, thrush.
    - Soaps.
    - Perfumes.
    - Deodorants.
    - Excessive sweat.
    - Condoms.
    - Wet wipes.
    - Textile dyes
    - Detergents.
    - Fabric conditioners
    - Panty liners.
    - Sanitary pads and tampons.
3. Skin conditions that may affect vulval skin
    - Atopic eczema.
    - Psoriasis.
    - Lichen simplex
    - Lichen planus
    - Lichen sclerosus
4. Urinary or faecal incontinence
5. Menopause
6. Pregnancy (due to swelling of the veins in the vulva (vulval engorgement) and an increased risk of vaginal discharge and thrush
7. Breast-feeding due to low oestrogen levels.
8. Generalised body itch
    - side-effect of some medicines or
    - due to some blood disorders,
    - thyroid problems or
    - kidney or liver disease.
9. Diabetes

10. Cancer of the vulval skin
11. Stress
12. Unknown causes

Diagnosis

- Find out from History and Examination

Investigations

- Look for diabetes, or thyroid, kidney or liver problems Skin patch testing in specialist centre

Treatment

By treating the cause if possible.
Treatments for itchy vulva (pruritus vulvae) vary, depending on the cause. For example:

- Identifying and stopping the use of anything that may be sensitising the vulval skin.
- Using antifungal cream for thrush.
- Using antibiotic medicines for certain infections,
- Using steroid cream for various skin conditions.
- Using hormone cream or hormone replacement therapy (HRT) if the itch is related to the menopause.

In young girls, learning to wipe gently from front to back, and to wash and rinse well and dry even when showering (when the vulva can be missed or left soapy).

Moisturisers

- Bland moisturisers (emollients) such as emulsifying ointment can help to ease the itch. Some of the creamier emollients can be stored in the refrigerator to keep them cool.
- Vaginal moisturisers and lubricants can also be very helpful, especially if the itch is on the inside as well as the outside.

Try to avoid the itch-scratch cycle

- The itch-scratch cycle occurs when scratching causes more itching - which causes more scratching - which causes more itching - etc. It may make the itch worse. Excessive scratching can also cause thickening of the skin - which then becomes even itchier. Therefore, apart from any other treatment, try not to scratch if at all possible.
- Keep nails cut short and don't wear nail varnish. Scratching may also damage the vulval skin and increase the risk of the skin becoming infected with germs (bacteria).

General vulval skin care and other advice

- Clothes
- Wear loose, 100% cotton underwear
- Change your underwear daily.
- Avoid tight-fitting clothes
- Consider wearing no underwear - for example, when you are at home, and at night.

Washing

- Wash vulva gently, once a day. Do not scrub or wash vigorously and avoid using a sponge or flannel to wash with.
- Taking a shower than having a bath,

- Dry the skin gently

Other general advice

- Don't use any of sensitive soap, cream, cloth
- Avoid antiseptics or special vaginal washes.
- Avoid condoms that are lubricated with spermicide, avoid perfumed lubricants.
- Do not shave pubic hair.
- An antihistamine medicine at bedtime may help if sleep is affected.
- In most cases, a cause can be found for an itchy vulva (pruritus vulvae). Treatment is then aimed at the underlying cause. However, in some cases no cause can be found. The general advice on clothes, washing, etc., will usually help.
- **Note:** steroid ointments can make some conditions of the vulva worse.

Reference

- *https://patient.info/health/vulval-problems-leajlet/itchy-vulva-pruritus-vulvae*

CERVICAL CANCER

Prevention and control: a comprehensive approach

- It is caused by the sexually transmitted HPV, which is the most common viral infection of the reproductive tract. Almost all sexually active individuals will be infected with HPV at some point in their lives and some may be repeatedly infected. The peak time for infection is shortly after becoming sexually active.
- The majority of HPV infections resolves spontaneously and do not cause symptoms or disease. *However, persistent infection with specific types of HPV (most frequently, types 16 and 18) may lead to precancerous lesions. If untreated, these lesions may progress to cervical cancer.*
- The core principle of a comprehensive approach to cervical cancer prevention and control is to act across the life course using the natural history of the disease to identify opportunities in relevant age groups to deliver effective interventions.

Primary prevention

Girls 9-13 years (role of general practitioners)

- HPV vaccination (Girls and boys, as appropriate)
- Health information and warnings about tobacco use*
- Sexuality education tailored to age & culture
- Condom promotion/provision for those engaged in sexual activity
- Male circumcision

Secondary prevention

Women >30 years of age (if facilities available)

- "Screen and treat" with low-cost technology VIA followed by cryotherapy
- HPV testing for high-risk HPV types (e.g. types 16, 18 and others)

Tertiary prevention

All women as needed (treatment of invasive cancer at any age)

- (Refer to specialist centre)
- Ablative surgery
- Radiotherapy
- Chemotherapy

Key facts about HPV vaccines

- Seventy-percent (70%) of cervical cancers worldwide are caused by only two HPV types (16 and 18).
- Two vaccines against HPV are licensed in most countries.
- Both vaccines prevent over 95% of HPV infections caused by HPV types 16 and 18, and may have some cross-protection against other less common HPV types which cause cervical cancer. One of the vaccines also protects against HPV types 6 and 11 which cause anogenital warts.

- Both vaccines work best if administered prior to exposure to HPV.
- The vaccines cannot treat HPV infection or HPV-associated disease.
- The WHO recommended target group for vaccination is 9-13 year-old girls who have not yet become sexually active.
- Both vaccines require 3-doses administered over a period of 6 months.
- Safety of these vaccines is being closely monitored, and thus far, is very reassuring.
- HIV-infected individuals can be vaccinated.

Screening and treatment of precancerous lesions

- Cervical cancer screening is the systematic application of a test to identify cervical abnormalities in an asymptomatic population. Women targeted for screening may actually feel perfectly healthy and see no reason to visit health facilities.
- Screening services may be provided either as organized or opportunistic (i.e. taking advantage of a woman's visit to the health facility for another purpose) services or a combination of both.
- For treatment of precancerous lesions, the technology of choice is *loop electrosurgical excision procedure (LEEP). In low resource settings*, recent WHO guidelines recommend *cryotherapy* as a good alternative treatment for eligible VIA positive lesions. In high- resource settings, other techniques such as cold knife conisation can be used.

Criteria for age and frequency of cervical cancer screening

- Women younger than 30 years of age should not undergo screening except for women known to be HIV-infected or living in a high HIV prevalence area.
- At a minimum, a national programme should prioritize women who are *between 30*-49 year-old for screening.
- The screening *interval* (frequency) *should not be less than* 5*years* (and not less than 10 years, if using an HPV test).
- Priority should be given to maximizing coverage within the at-risk target age group and assuring complete follow-up of those women with abnormal screening test results rather than maximizing the number of tests performed in a woman's lifetime.
- In high HIV prevalence countries, women who screen positive for cervical cancer should be offered HIV testing and counselling.

Key facts about cervical cancer screening and treatment

- Cervical cancer screening is the testing for precancer and cancer of women at risk, most of whom will be without symptoms.
- At a minimum, screening is recommended for every woman 30-49 years of age at least once in a life time.
- Globally, in 2012, there were nearly a billion women between 30 and 49 years old, most of whom have never been screened even once in their life.
- Early detection and treatment of precancerous lesions can prevent the majority of cervical cancers.
- Three different types of tests are currently available:
- Conventional (Pap) and liquid based cytology (LBC)
- Visual inspection with Acetic Acid (VIA)
- HPV testing for high-risk HPV types (e.g. types 16 and 18).
- HPV vaccination does not replace cervical cancer screening. In countries where HPV vaccine is introduced, screening programme may need to be developed or strengthened.

Treatment of cervical cancer

- The most common treatment for cervical cancer is surgery and / or combination of chemotherapy and radiotherapy.
- Treatment varies with the stages of the disease. For early invasive cancer, surgery is the treatment of choice.

Reference

1. *Comprehensive cervical cancer prevention and control: a healthier future for girls and women, WHO publication, 2013*