GYNAECOLOGY MCQ

DR ANITHA RAJEEV

FAMILY PLANNING

TYPES

- Hormonal
  - COC/OCP/oral pills
  - POP/ mini pills
  - Injectables
  - Implants
  - Emergency contraception
- Intrauterine contraceptive devices
  - Inert devices
  - Intrauterine hormonal devices
- Barrier methods
  - Condoms
  - Diaphragms
  - Cervical caps
  - Vaginal vault caps

FAMILY PLANNING

- **Natural methods**
  - Basal body temperature method
  - Billing's ovulation method
  - Sympto thermal method
  - Calendar method
  - Coitus interruptus
- **Female sterilisation**
  - Tubal ligation

COC

CONTENT

- Estrogen(EE)
- Ethinyl estradiol
- Mestranol
- Mestranol converted to EE in the liver
- EE is the estrogen of choice
- Progestogen
- 1st generation
- Norethisterone acetate (NET)
- Ethynodiol acetate
- Lynestronol
- Norethynodrel
- 2nd generation
- Norgestrel
- Laevonorgestrol (LNG)
- LNG is 10 times more potent than NET
- Less incidence of thrombo embolism when compared to NET
- 3rd generation- gestogens
- Desogestrel
- Gestodene
- Unclassified
- Cyproterone acetate
- Drospirenone
- Less androgenic, but [illegible] risk of DVT

COC

Common combinations available

- EE+ Norethisterone- Brevinor
- EE+ LNG- Microgenon, Levlin
- EE+ Desogestral- Marvelon
- EE+ Cyproterone acetate- Diane 35
- EE+ Drospirenone- Yasmin

- Less androgenic preparation
- Diane -35(hirsuitism/acne)
- Marvelon (acne)
- Yasmin (aldosterone antagonist, used for PMS
- acne Risk VTE. Being mild diuretic,
- it causes decreased bloating and fluid
- retention)

COC

Monophasic pills

Contain same amount of estrogen and progestogen in each pill

Includes

- **low dose pills**– 20mcg of estrogen
- **regular dose pills**– 30–35mcg estrogen
- **high dose pills**– 50mcg of estrogen

Biphasic pills

- Has same amount of estrogen but level of progestin is increased half way through. Delivers one strength for 7 –10 days and second strength for next 11–14 days and last 7 days placebo. Can reduce incidence of breakthrough bleed and spotting

Triphasic pills

- Has 3 different doses of hormones in the 3 weeks of active pills
- Changes both estrogen and progestin
- Usually given in women with acne
- Efficacy is almost the same for all and one does not carry any advantage over other
- **A suitable first choice is low or regular dose monophasic OCP**

COC

ACTION

- Prevents ovulation by hypothalamic suppression due to negative feedback resulting in anovulation and simulates ovarian hormones
- Estrogen suppress FSH and reduces LH preventing ovulation. Progesterone further suppresses LH and also thickens cervical mucous and inhibits implantation of embryo by changing uterine lining

COC

CONTRAINDICATIONS

- Pregnancy
- Breast feeding and </= to 6 weeks post partum
- Current or past history of VTE
- Vascular disease
- Presence of multiple risk factors for CVD like older age, smoking
- HT with systolic >/=160 or diastolic >/= 100 mm Hg
- Complicated valvular heart disease(pulmonary HT, atrial fibrillation, h/o sub acute bacterial endocarditis)
- Current or past history of IHD
- Migraine with aura and focal neurological symptoms
- Stroke
- Age >or =35 years and smoking >/= 15 cigarettes per day
- Diabetes complicated by nephropathy, retinopathy or vascular disease
- Estrogen dependent tumors like breast cancer
- Active liver disease(active hepatitis, adenoma/ hepatoma, cancer, severe cirrhosis)
- Known thrombogenic mutations(Factor 5 Leiden/ Prothrombin mutations, Protein S and Protein C and antithrombin deficiencies)
- Raynaud's with lupus anticoagulant
- SLE with antiphospholipid antibodies
- BMI >/ = 40
- Major surgery with prolonged immobilisation

COC

Relative contraindications

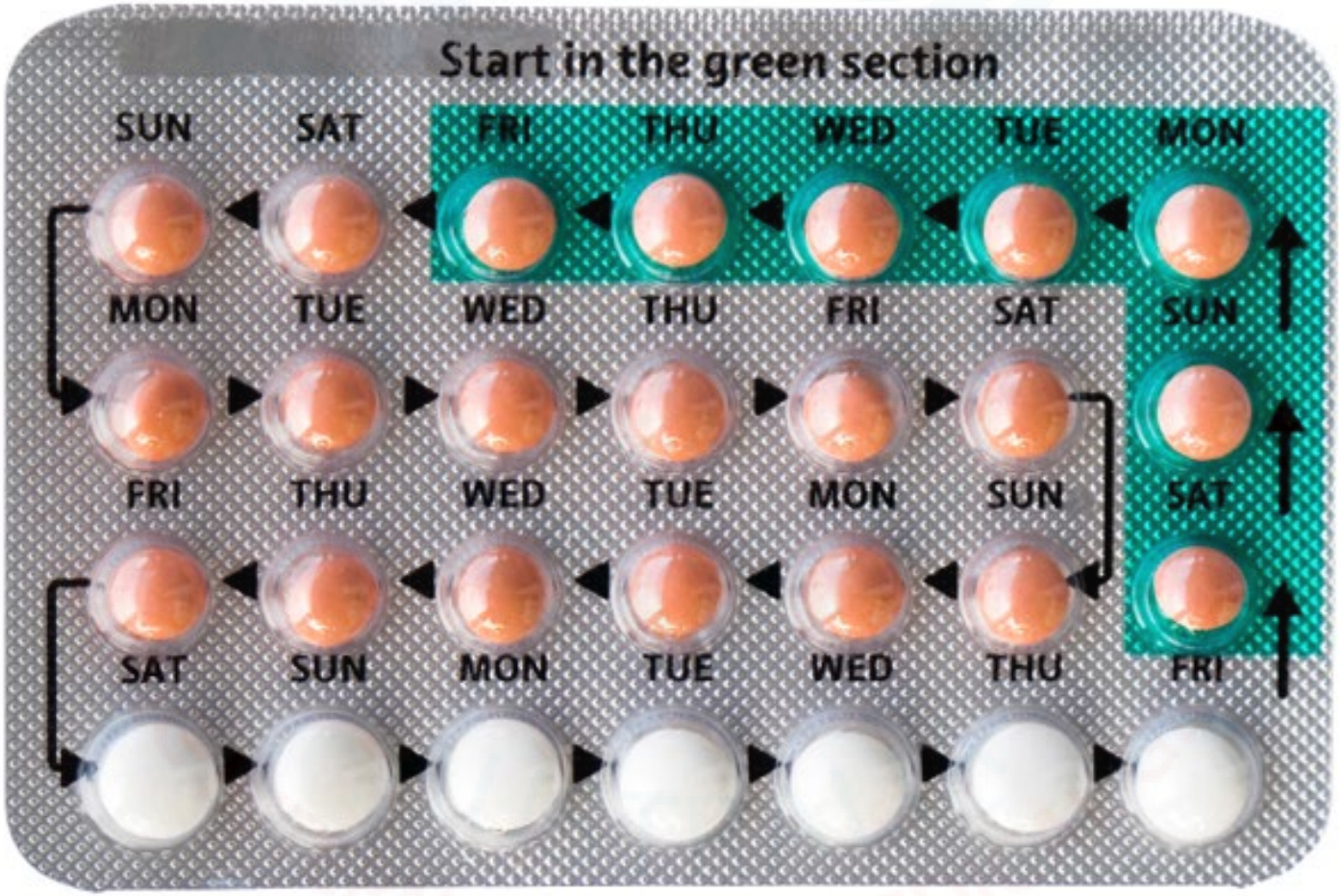
- Adequately controlled HT
- HT(systolic 140-159/ diastolic 90-99)
- Migraine over 35 years
- Current gall bladder disease
- Mild cirrhosis
- H/o COC related cholestasis
- Smoker over age of 35 years(<15/day)
- Use of medications interfering with COC metabolism

COC

ADMINISTRATION

- 28 pill pack, 21 hormonal pills and 7sugar pills
- Start hormonal pill on the first day of menstrual period, continue with hormonal pills and then 7 sugar pills
- Take pill on the same time every day, 1pill /day
- On starting sugar pills, the lady gets periods
- Protection starts from 1st day of using hormonal pills if taken from the 1st day of periods
- If starting pill after Day 1-5 , alternate methods of contraception should be used for 7 days if going for sex and pregnancy needs to be ruled out before starting pills
- Also a 24/4 pill pack is available

COC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COC

ADVANTAGES

- Decreased menorrhagia, dysmenorrhea and pre-menstrual syndrome
- Periods become shorter, lighter and regular
- Decreased iron deficiency anaemia
- Decreased benign breast disease
- Decreased incidence of functional ovarian cysts, sebaceous disorders (acne)
- Decreased incidence of cancer of ovary, endometrium and colon

COC

DISADVANTAGE

- Does not protect against STI
- Compliance

COC

SIDE EFFECTS

MILD

- nausea, vomiting, bloating, head ache, breast tenderness, weight gain
- break through bleeding
- (usually settles in 3-4 months time. If not check compliance, rule out Chlamydia, change from low dose to regular dose of EE, if already on regular dose, change progesterone to 1 mg NET or to a desogestral or gestodene containing COC, or vaginal ring, another contraceptive)
- spotting

MAJOR

- DVT
- MI
- Stroke
- Retinal, mesenteric, renal, hepatic thrombosis

COC

Risk of cancer

- Not associated with an overall risk of cancer

Breast cancer

- Available data conflicting for breast cancer but thought to be related to increased incidence

Cervical cancer

- COC for more than 5 years is a risk factor as they change susceptibility of cervical cells to persistent infection with high risk HPV types
- increased risk especially in particular groups of COC users

COC

PRECAUTIONS

Diarrhoea and vomiting

- if within 2 hours of taking hormonal pill, take the next hormonal pill
- But if severe diarrhoea (6-8 or more watery stools/ day) or vomiting lasting more than 24 hours, continue taking hormonal pills but use alternate methods like condoms for 7 days along with pills

Drugs decreasing COC efficacy

- with griseofulvin, antibiotics like rifampicin, anticonvulsants like carbamazepine, phenobarbital, phenytoin, topiramate, felbamate, oxcarbazepine , anti retro virals, which induces cytochrome P450 liver enzyme which increases metabolism of EE

COC

MISSED HORMONAL PILLS

If within 24 hours (Late pill)

- take recently missed 1 pill as soon as you remember and just keep going with the rest even if it means taking 2 pills on the same day
- No emergency contraception needed if sex happens

If >24hours(missed pill)

- Take recently missed 1 pill as soon as you remember then keep going with rest even if it means taking 2 pills on the same day
- If the pills fall on the sugar pill range within 7 days of missing the pills(from day 15- 21), skip sugar pills and start hormonal pills from next pack
- Use alternate methods of contraception for 7 days if going for sexual activity or abstain from sex

COC

Women with strong family h/o VTE(first degree relative <45 years)

- Exclude thrombophilias(Protein C, S, prothrombin, homocysteine, antithrombin 111,) before starting COC

Women undergoing pelvic surgery or extensive immobilization

- Cease COC 2 weeks before procedure and until 6 weeks after procedure

Women on enzyme inducing anticonvulsants

- Give high dose COC having 50 micrograms of EE

Women with hirsuitism

- COC with cyproterone acetate is the best

Women with nausea

- Decrease EE dose or take pill at night for first 2 months

Women with weight gain

- Decrease dose or use drospirenone containing COC

COC

Delaying period

- If on COC- continue hormonal pills till delay in periods is preferred

or

- Norethisterone 5mg bd/tds from 3 days prior to expected date of periods till delay in periods is preferred
- **Efficacy of COC-** 99.7% in perfect use

POP

Content

- contains progestogen alone like norethindrone or drospirenone
-

Action

- by thickening cervical mucous
- changes uterine lining
- alters tubal motility
- ovulation stops but not consistently

POP

INDICATIONS

- Could be used in contraindications to estrogen content of COC
- In DM, Migraine with aura, lactation, HT, history or current DVT/VTE IHD, stroke, biliary tract disease, Raynaud's with lupus anticoagulant
- Best oral choice in postpartum women

CONTRAINDICATIONS

Absolute

- Breast cancer diagnosed within last 5 years
- Pregnancy

Strong Relative

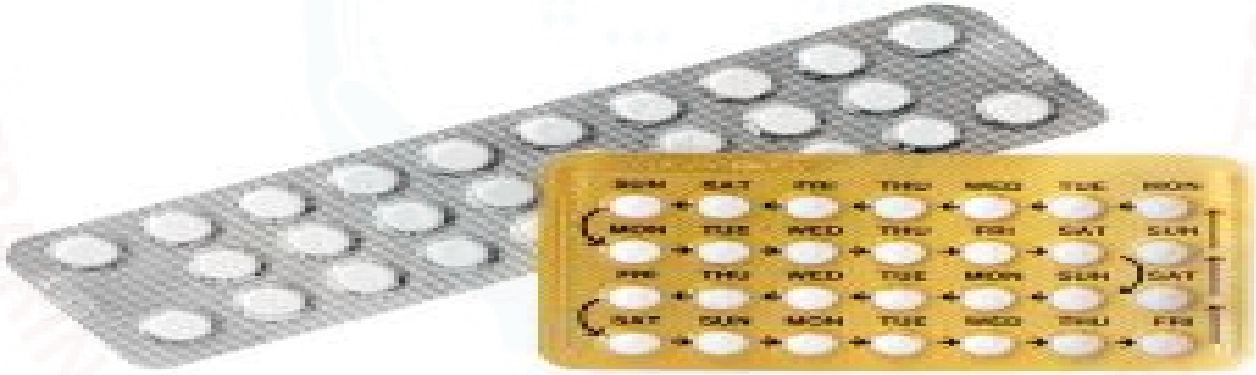
- Active liver disease
- Breast cancer with no evidence of disease for last 5 years
- Undiagnosed vaginal bleeding
- On liver enzyme inducing medications- anticonvulsants
- SLE with positive or unknown antiphospholipid antibodies
- If stroke/IHD develop while on POP

POP

ADMINISTRATION

- 28 pill pack
- No sugar pills
- Start from 1- 5 days of periods
- Protection starts immediately
- 1pill at the same time everyday
- If at any other time of cycle, exclude pregnancy and use alternate methods for 48 hours if going for sex

POP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POP

SIDE EFFECTS

- Irregular bleeding (40%)
- Amenorrhea (20%)
- Breast tenderness
- Headaches
- Risk of getting follicular ovarian cysts

POP

MISSED PILLS

- If greater than 3 hours, take recently missed 1 pill and just keep going with rest even though it means taking 2 pills on the same day
- Use alternate method of contraception like condoms for 48 hours if gong for sex
- Efficacy- 92-99%

DEPO MPA

- Injectable progestogen(Medroxy progesterone acetate)
- Dose- 150mg I/M within first 5 days of periods
- If at any other time, alternate method like condoms for 7 days if going for sex
- Provides contraception for 12 weeks
- WHO recommends repeat injections in 12 weeks +/- 14 days
- Repeat injections can be given up to 16 weeks after last injection with little risk of pregnancy

ACTION

- Main mode is by inhibiting ovulation
- Also increases cervical mucous thickness
- Possibly interferes with implantation

SIDE EFFECTS

- Amenorrhea (70%)
- Irregular bleeding
- Weight gain
- Breast tenderness
- Headaches
- Acne

DEPO MPA


1 ml Sterile Aqueous Suspension
Depo-Provera®
150 mg/ml
Depo-Provera®
150 mg/ml
Medroxyprogesterone Acetate
Ph. Eur.
150 mg/syringe
alamy stock photo
B6MA80
www.alamy.com

DEPO MPA

CONTRAINDICATIONS

Absolute

- Breast cancer diagnosed within last 5 years
- Pregnancy

Strong relative C/I

- Cardiovascular disease (angina, PVD, MI)
- Multiple risk factors for cardiovascular disease
- DM with vascular complications
- Past H/O breast cancer
- Undiagnosed vaginal bleeding
- Current DVT/ PE
- Severe active liver disease
- TIA/Stroke
- Migraine with aura for first time or recurring with use

DEPO- MPA

ADVANTAGES

- Low failure rate
- Relief from menorrhagia, dysmenorrhea
- Could be given to mentally challenged and women with epilepsy on anticonvulsants

DISADVANTAGES

- Delayed return of fertility- can return within 12 months but sometimes may take up to 18 months
- Decreased bone density which is reversible
- No protection against STI

- EFFICACY- 99.7%

IMPLANTS

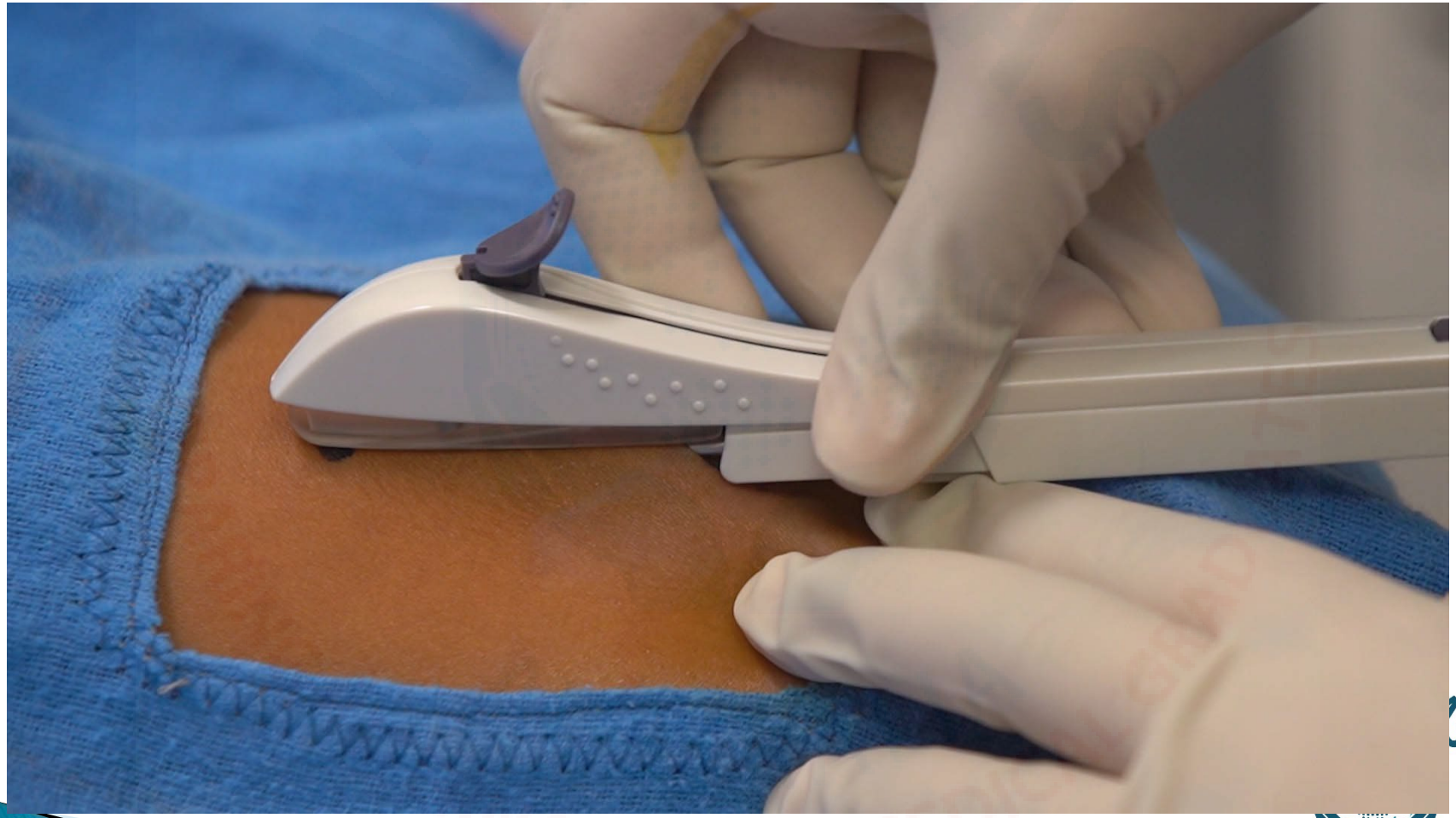
IMPLANON

- Contains etonorgestrel
- 4cm rod inserted sub dermally under LA in the upper arm of non dominant hand by trained doctor. Releases 60-70mcg/day up to 6 weeks and then 35-45mcg of etonorgestral/day.
- Insertion within days 1-5 of periods
- If at any other time, use condoms for 7 days if going for sex
- Provides contraception for 3 years

IMPLANON


MSD
AUST R 198455
Training recommended before use.
To register, go to
www.implanonnxt.com.au/training
Implanon NXT®
Etonogestrel
68 mg implant
For subcutaneous use
1 applicator containing 1 contraceptive implant
PRESCRIPTION ONLY M
KEEP OUT OF REACH OF CHI
BATCH NO: G23859001

IMPLANON



IMPLANON

ACTION

- Inhibits ovulation
- Prevents implantation
- By thickening cervical mucous

IMPLANON

CONTRAINDICATIONS

Absolute

- Breast cancer diagnosed within last 5 years
- Pregnancy

Strong relative C/I

- Severe active liver disease- severe cirrhosis, cancer, hepatocellular adenomas
- Current DVT/ PE
- Past h/o breast cancer with no current disease for 5 years
- Enzyme inducing medications
- H/o undiagnosed vaginal bleeding
- If she develops IHD, stroke or TIA or migraine with aura while on Implanon

IMPLANON

SIDE EFFECTS

- Amenorrhea
- Irregular bleeding (most common)
- Weight gain
- Breast tenderness
- Head aches
- Acne
- Depression

IMPLANTS

ADVANTAGES

- Low failure rate and one of the most effective reversible method
- Rapid return of fertility after removal
- Can be used during lactation
- Contraception for 3 years

DISADVANTAGES

- Requires a procedure for insertion and removal
- Specific risks associated with procedure
- No protection against STI

- Efficacy is more than 99.9%

EMERGENCY CONTRACEPTION

Hormonal methods of contraception	Failure to use additional contraceptive precautions when starting the method
Combined oral contraceptive pill	Two or more hormone (active) pills are missed in the week before and/or the week after the hormone-free interval and unprotected sex occurs in the hormone-free interval or in week one New pack started 24 hours late
Combined hormonal vaginal ring	Extension of ring-free interval by >48 hours Emergency contraception is indicated if ring removal occurs in week one and there has been unprotected sexual intercourse or barrier failure during the hormone-free interval or week one

EMERGENCY CONTRACEPTION

Progestogen-only pill	Late or missed pill (>3 hours late) and unprotected sex, or barrier failure has occurred before effectiveness has been re-established (ie 48 hours after restarting)
Progestogen injection	Unprotected sex or barrier failure has occurred >14 weeks since last injection of depo-medroxyprogesterone acetate or within the first seven days after late injection

EMERGENCY CONTRACEPTION

Intrauterine contraception	Intrauterine device removal without immediate replacement, partial or complete expulsion of device, missing threads and device location unknown. Emergency contraception should be advised if there has been unprotected sex in the seven days prior to removal, perforation, partial or completed expulsion.
Implants	Implant expired and unprotected sex has occurred

EMERGENCY CONTRACEPTION

TYPES

- Oral options- LNG containing pill and ulipristal acetate (UPA)
- Copper containing IUCD

ORAL OPTIONS

LNG PILL

- 1.5mg of LNG tab stat within 72 hours of unprotected intercourse
- But has some efficacy till 96 hours but risk of pregnancy is higher
- Sooner taken, more effective
- Not as effective as IUCD/UPA
- Reduced efficacy if BMI>/ = 30

Contraindications

- Allergy and hypersensitivity
- Severe liver disease
- Enzyme inducing medications (dose has to be doubled (3 mg) if not suitable for Copper IUCD)

- Not contraindicated in breast feeding

EMERGENCY CONTRACEPTION

Action

- prevents or delays ovulation
- Not effective if ovulation has already happened

S/E

- nausea, vomiting (vomiting within 2 hours, repeat pill)
- headache, dizziness, spotting, altered vaginal bleeding, breast tenderness
- Usually should get periods in 3 weeks
- Do pregnancy test if periods do not occur by 3 weeks
- Can continue taking hormonal contraception immediately using Quick Start method
- Screen for STI's

EMERGENCY CONTRACEPTION

ULIPRISTAL

- Most effective oral method as it is more effective than LNG
- Can be given up to 5 days of unprotected intercourse
- Selective progestogen release modulator

DOSE

- 30 mg tab stat orally

ACTION

- Prevents or delays ovulation
- Not effective if ovulation has happened
- Can prevent pregnancy if taken during LH surge but before peaking

CONTRAINDICATIONS

- Allergy/ hypersensitivity
- Severe liver disease
- Severe asthma
- Liver inducing medications(no recommendation for high dose)

ULIPRISTAL

SIDE EFFECTS

- nausea, vomiting (vomiting within 3hours, repeat pill)
- headache, dizziness, spotting, altered vaginal bleeding, breast tenderness

- Not contraindicated in breast feeding
- BMI above 30 may have reduced efficacy but to a lesser extent than LNG
- Cannot initiate or restart hormonal contraception immediately because of potential reduction in UPA effectiveness
- A delay of 5 days is advised with use of condoms or interim abstinence and then until method becomes active

EMERGENCY CONTRACEPTION

COPPER IUCD

- Most effective way of emergency contraception
- 99% efficacy
- Can be given till 5 days(120 hours) of unprotected intercourse

ADVANTAGE

- Offers ongoing contraception for 5-10 years
- No medication interactions

ACTION

- Inhibition of fertilization as copper ions are toxic to sperm and ovum
- Prevents access of sperm to ovum
- Causes sterile inflammation of uterine lining preventing implantation

CONTRAINDICATIONS

- Current pelvic infection
- Distortion of uterine cavity

SIDE EFFECTS

- Initial altered bleeding pattern
- Ongoing heavy periods
- Small risk of perforation, infection and expulsion

IUD

Types

Inert

- Copper IUD(Multiload-Cu375, TT380Slimline)
- Multiload works for 5 years and TT Slimline works for 10 years
- Both are inserted into uterine cavity

Action of CU IUCD

- Exact mechanism unknown
- Foreign body effect- sterile inflammation
- Toxic to sperm and ova
- But could prevent sperm from reaching egg
- Prevents implantation

LNG IUD

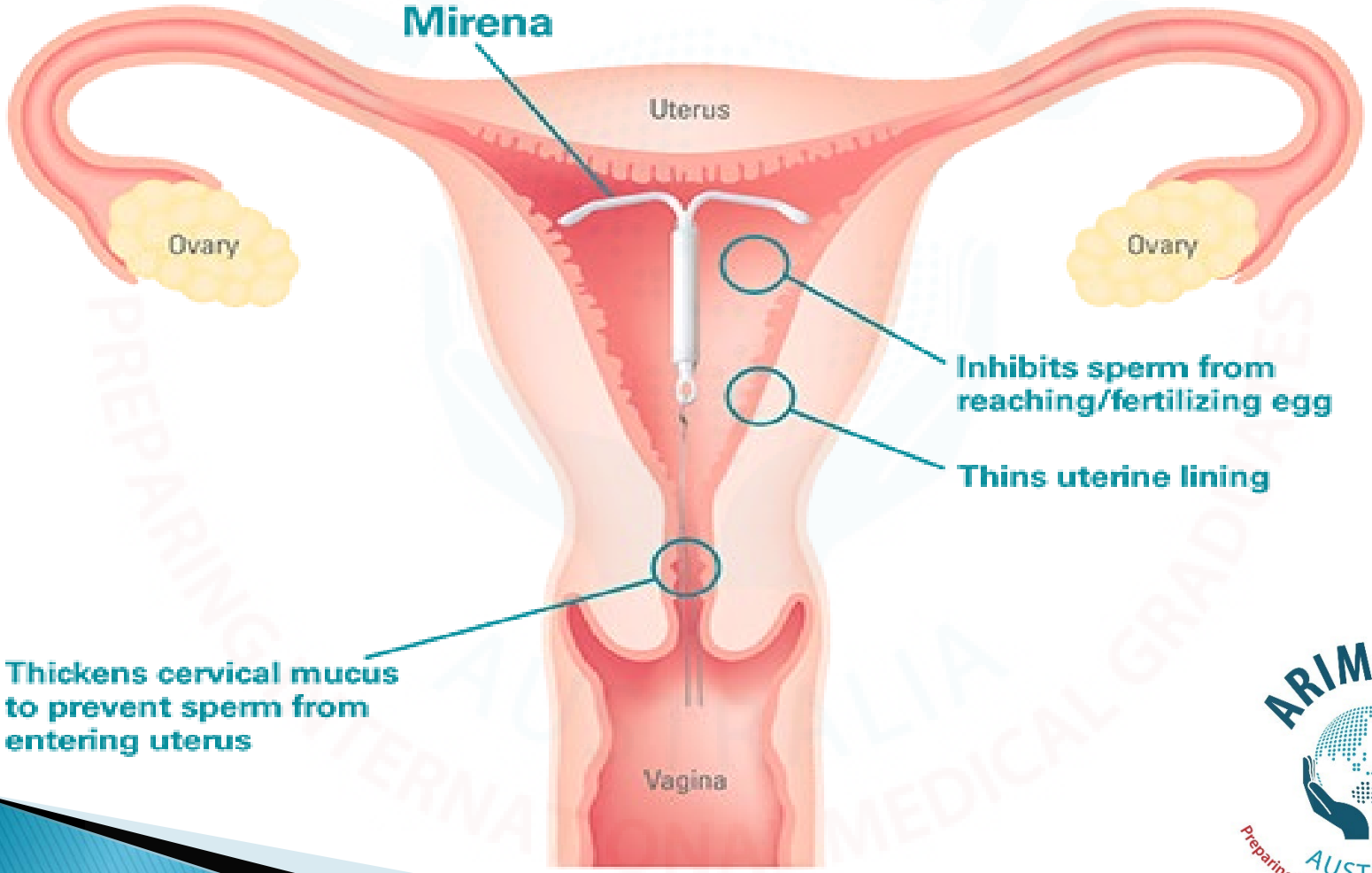
- LNG IUCD(Mirena) is otherwise called intrauterine system (IUS)

- Has 52 mg of LNG in its stem
- Releases 20 mcg/ day over a period of 8 years

- Inserted in day 1-7 of menstrual cycle
- After which condoms need to be used for 7 days if going for sex
- No sex for 48 hours after insertion

LNG IUD

LNG IUD



ARIMGSAS AUSTRALIA
Preparing International Medical Graduates

LNG IUD

CONTRAINDICATIONS

Absolute

- pregnancy
- active PID or cervicitis with Chlamydia/Gonorrhoea
- after peurperal sepsis or septic abortion
- pelvic TB
- undiagnosed genital bleeding
- uterine malformations
- HSIL and LSIL intraepithelial lesions
- uterine/ cervical cancers/ current breast cancer

Relative

- increased risk of STI
- 48 hours to less than 4 weeks postpartum
- current VTE
- ovarian cancer
- past h/o breast cancer

LNG IUD

ADVANTAGES

- Long acting contraception
- Good alternative to sterilisation
- Rapid return of fertility
- Mirena– reduces menstrual loss and dysmenorrhea

DISADVANTAGES

- Requires procedure for insertion
- Associated risks of insertion
- No protection against STI

LNG IUD

SIDE EFFECTS

Ectopic pregnancy

- If pregnancy occurs with IUD in situ even though low risk
- A h/o EP is not a contraindication
- Remove IUD even if patient decides to continue or terminate pregnancy just in case pregnancy happens

Risk if IUCD in situ in pregnancy

- Miscarriage, sepsis, premature labour

IUCD

PID

- Increased risk of PID in the first 20 days post insertion related to sexual activity and number of partners. Overall risk is low

Menorrhagia

- More common with copper IUD
- Amenorrhoea and light bleeding is common with LNG IUD
- Bleeding settles in 3-5 months with LNG IUD

Abdominal pain

- Can have cramp like abdominal pain and backache soon after insertion and can persist for several weeks intermittently

Extrusion

- More common in first 3 months of insertion, in nulliparous women and during periods
- Translocation
- Perforation
- Increased vaginal discharge, weight gain, acne, breast tenderness, headache
- Review in 3- 6 weeks time
- Teach patient self palpation of strings and check for strings after menstruation or once a month

IUD

KYLEENA

- LARC IUD having LNG 19.5 mg working up to 5 years
- Less efficacious than Mirena

VAGINAL RING

COMBINED VAGINAL RING(Nuva ring)

- Releases 15 micrograms of EE and 120 micrograms of etonorgestral daily

Action/ Contraindications

- Same as COC

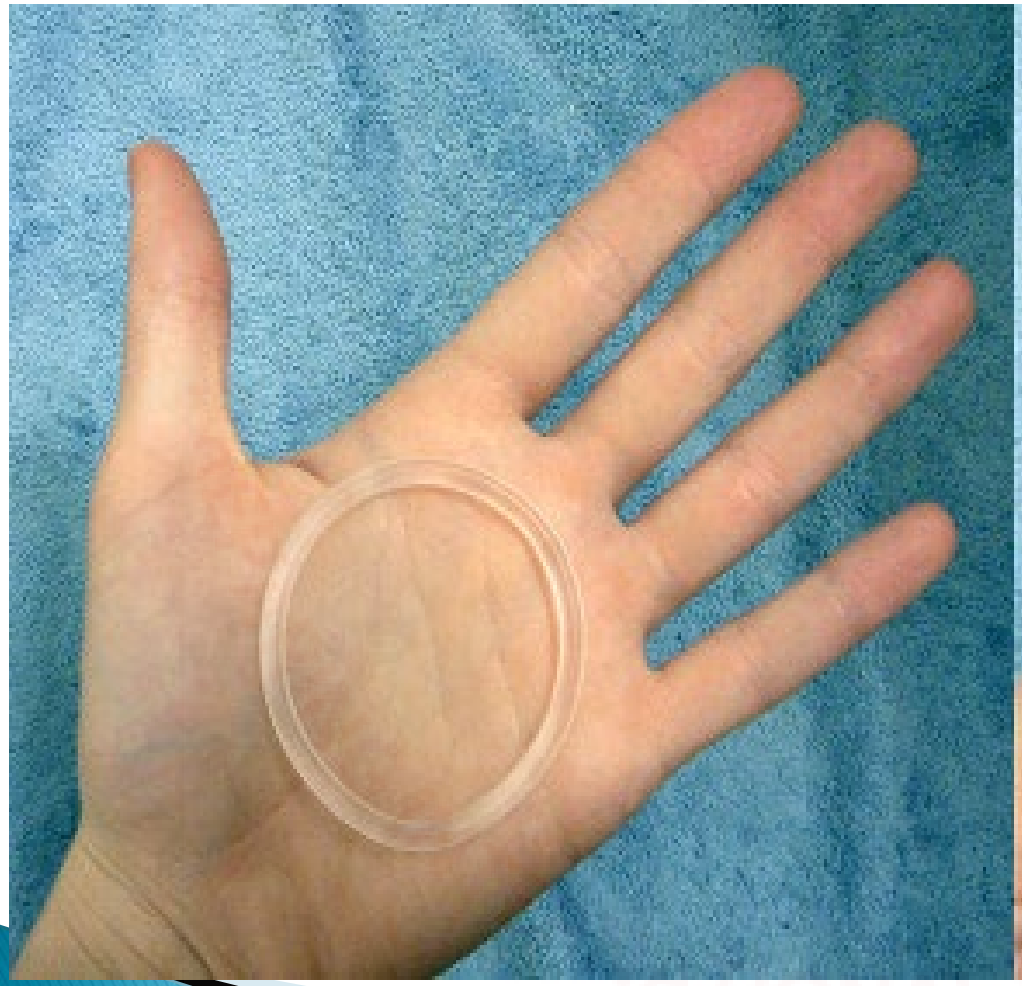
Administration

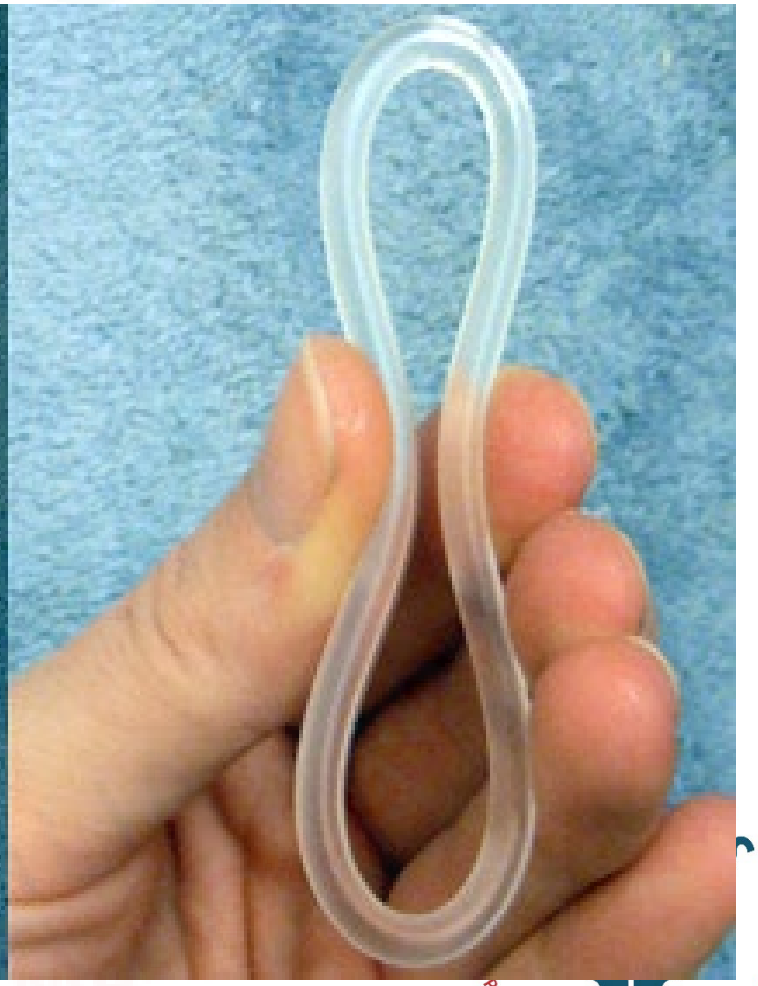
- One size self administered
- Inserted into vagina, at days 1- 5 and removed after 21 days. Then new ring is reapplied after 7 days
- If after 5 days, condoms should be used for 7 days if sex happens

Side effects

- Same as COC but less nausea, bloating and BTB

NUVA RING





FAMILY PLANNING

SPECIAL CIRCUMSTANCES

Women < 18 years

- **COC is a suitable choice if no contraindications due to improvement of symptoms like dysmenorrhea, acne and ability to manipulate cycles. Young people can be encouraged to consider combining it with condoms**
- POP has high failure rates in younger women
- DMPA is not the first choice due to its potential to impact on attainment of peak bone density
- **Implant can be given but COC is the choice** as there is no published information about their use in younger women
- IUD not a choice due to risk of expulsion due to nulliparity and risk of STI in this age group
- **Vaginal ring can be given** who are comfortable with insertion but its price could be a barrier

FAMILY PLANNING

WOMEN ABOVE 40 YEARS

- **Should use contraception for 12 months after menopause if menopause happens >50 years and for 2 years if menopause happens <50 years**
- **COC** can be used till 51 years of age
- **POP** can be stopped either at 51 years of age or when she develops menopausal symptoms whichever is later
- DMPA not considered due to risk of osteoporosis
- Women with Cu IUCD inserted after the age of 40 can leave it up to menopause
- Mirena if inserted after 45 years can be left in situ up to 7 years. **Mirena** should be removed at 51 years or when she develops menopausal symptoms whichever is later

POST PARTUM

Lactational amenorrhoea

- Can act as long as mom remains amenorrhoeic post partum
- Less than 6 months post delivery
- The baby is fully breast fed frequently and regularly(minimum of 6 long breast feeds every 24 hours)

COC

- Has a detrimental effect on the volume of breast milk especially under 6 weeks post partum
- If not breast feeding, can be started after 3 weeks post partum

POP and Implants

- Can be started any time post partum

DMPA

- After 6 weeks post partum if breast feeding or within first 5 days post partum if not breast feeding

IUCD

- Inserted within 48 hours or after 4 weeks post partum including after LSCS
- If inserted within 48 hours, there is a risk of expulsion
- Vaginal ring not recommended

FAMILY PLANNING

- Women with VTE – progestogen only methods

- Women having migraine with aura or women>35 who develop migraine without aura during use of COC– progestogen only methods

BARRIER METHODS

TYPES

Condoms- 2types – Male and female

Male condoms

- Effective in preventing STI's including HIV (latex condoms can fully protect HIV) if used correctly and also against cervical cancer due to HPV
- Reversible method
- Efficacy- 85-98%

Female condoms

- Covers the cervix, lines vagina and shields introitus. Can also protect against STI. More difficult to use
- Efficacy- 79- 95%

Diaphragms

- Dome shaped rubber cup with a flexible rim which fits inside vagina and covers cervix. Needs to be inserted before intercourse and should be removed only after 6-8 hours.
- Does not protect against STI
- Efficacy- 88-94%

FEMALE CONDOM

DIAPHRAGM

Barrier Methods

Spermicides

- Contains nonoxynol.
- Not available in Australia as nonoxynol increases risk of HIV transmission
- Cervical cap
- Similar to diaphragm but smaller in size and more rigid. Has to be fitted by health care personal to choose size and then can be used by patient Has to be left in place for 48 hours after intercourse
- Efficacy- 82- 90%

CERVICAL CAP

NATURAL METHODS

- Also called fertility awareness based method
- Regular periods and high motivation required

BASAL BODY TEMPERATURE METHOD

- Oral temperature recorded before getting out from bed. Plotted on basal body temperature chart
- Following ovulation, body temperature rises by 0.2- 0.5 C for 3 days in comparison to the previous 6 days temperature under progestogenic influence
- The women is most fertile for 2 days before BBT rises
- There is no temperature change during ovulation
- While a woman is only fertile in 24-36 hours after ovulation sperm may survive in her uterus up to 5-6 days after sexual intercourse So a woman can become pregnant if she had sex 5-6 days prior to ovulation
- So she has to refrain from sex till she finishes the rise in BBT

NATURAL METHODS

BILLING'S OVULATION METHOD

- By observing mucous discharge at the vaginal opening in the morning immediately after waking
- Fertile mucous as ovulation approaches is wet, clear, more watery and increases in amount and is lubricative and vulva feels wet
- Peak mucous day is the last day of this estrogenised mucous
- Post ovulation it changes to thick, cloudy and sticky mucous under the influence of progestogen and vulva will feel dry
- Abstinence from the first awareness of this wet mucous up to 3 consecutive dry days

NATURAL METHODS

CALENDAR METHOD

- Previous 3 cycles recorded
- Take shortest and longest cycles
- Subtract 14 from each to find shortest and longest ovulation time
- Subtract 6 from shortest ovulation time as sperm can survive for 6 days and sex before 6 days of ovulation can result in pregnancy
- Add 2 to longest ovulation time as ovum can survive for 24 – 36 hours. So no intercourse for 2 days after ovulation

CALENDER METHOD

Example

- If shortest cycle is 26 and longest is 29, so
- Shortest or early ovulation time is 26- 14= 12
- Longest or late ovulation time is 29-14= 15
- Subtract 6 from 12= 6
- Add 2 to 15= 17

- Abstinence from 6- 17 days of this cycle

NATURAL METHODS

SYMPTO THERMAL METHOD

- Combination of BBT, cervical mucous and calendar method
- **Early safe days are determined by using calendar method and confirming with mucous observations**
- **Late safe days are determined by using combination of mucous and temperature changes**

Coitus interruptus

- Male withdrawal prior to ejaculation.

FEMALE STERILISATION

Permanent method

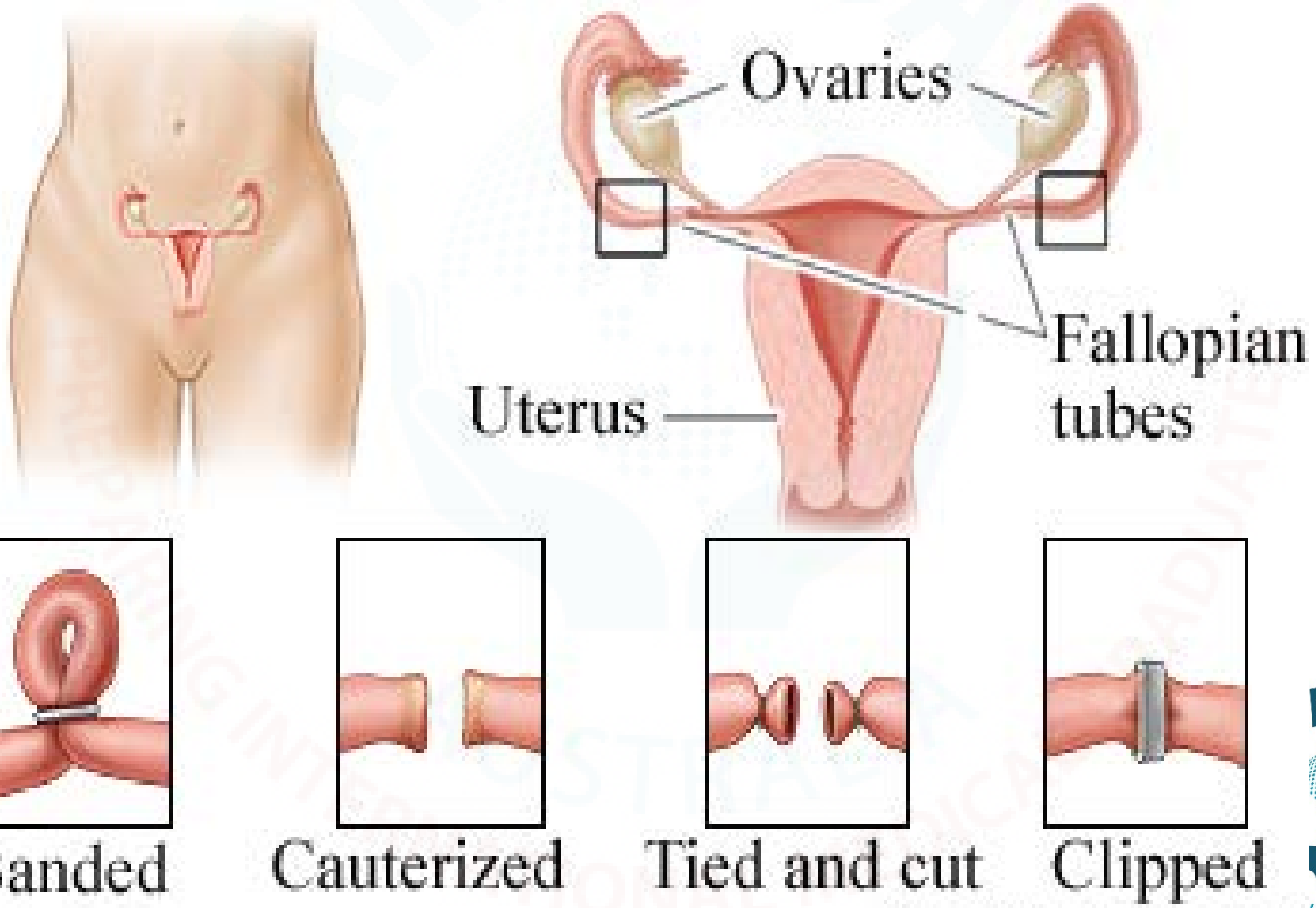
- Should be assumed to be irreversible
- Should be sure of having no more children in future and should discuss this with partner

METHODS

- Tubal ligation- both tubes are occluded with rings (Falope)/clips (Filshie or Hulka) or bands by laparoscopy or ligate tubes at 2 parts and cut in between
- Failure- <1%
- Reversal rate- 60%. Risk of ectopics
- Disadvantage- surgical risks, device migration, do not protect against STI

- Tubal occlusion- no longer available in Australia

TUBAL LIGATION



POST TUBAL LIGATION SYNDROME

SYMPTOMS

- Menstrual irregularities, pelvic pain, mood swings, fatigue, decreased libido

CAUSES

- Hormonal changes- hypothezised that tubal ligation reduces blood flow to ovariescausing follicular growth impairment, altered hormonal production resulting in heavy periods
- Psychological factors
- Autoimmune reactions
- Genetics

TREATMENT

- LSM
- Hormonal treatment- with combination of oestrogen and progesterone
- Tubal ligation reversal

MASTALGIA

TYPES

- Cyclical
- Non- cyclical
- Commonest type- cyclical
- Malignancy should be excluded

CYCLICAL MASTALGIA

- Age group- 30-35 years
- Usually in the latter half of cycle and severe during premenstrual days especially 3-5 days before periods
- Subsides with onset of periods
- Main underlying disorder- fibrocystic disease of breast
- Mastalgia in menopause- due to MHT
- Reduce estrogen dose

CYCLICAL MASTALGIA

CAUSE

- Breast tissue more sensitive to hormonal changes

INVESTIGATION- Breast imaging with U/S +/- mammogram

TREATMENT

- Reassurance- settles in few months time but can come and go
- Proper breast support
- Limited intake of caffeine, chocolates and red wine which has methyl xanthines
- Vitamins B1, B6 and E
- Loosing weight, stopping smoking
- Evening prim rose oil for about 6 months(increases Gamolenic acid an essential fatty acid)
- Pain killers- Panadol
- Local application of NSAID or oral
- Some women find their symptoms improve with low dose COC but for some it worsens. If so adjust COC/MHT

CYCLICAL MASTALGIA

SEVERE

- Tamoxifen, Bromocryptine, Danazol

NON CYCLICAL MASTALGIA

- **Age group**– 40–50
- Pain not related to periods
- Usually unilateral and localized
- Management similar to cyclical mastalgia

ABNORMAL UTERINE BLEEDING

MENORRHAGIA

- Blood loss greater than 80 ml/period, bleeding/ flooding not contained within large pads or tampons, clots > 3cm, presence of anaemia on blood testing or bleeding more than 7 days
- Most common cause- Ovulatory DUB
- Most common organic cause- fibroids
- Others
    - Adenomyosis
    - Endometrial polyps
    - PID
    - Ovarian cysts
    - Hormonal Contraceptives- Copper IUD, Depo, Implant
    - Endometrial/ cervical cancers
    - Thyroid disturbances
    - Stress
    - Bleeding disorders
    - Blood thinning agents

DUB

- Diagnosis of exclusion
- Excessive bleeding of uterine origin not associated with pelvic disease, pregnancy or systemic disease. Not due to any recognizable cause

TYPES

- Ovulatory- 35- 45 years
- Anovulatory- between12-16 and 45-55yrs

DUB

CAUSE

- Largely unknown
- Constant non cycling estrogen levels stimulating endometrial growth
- Proliferation without periodic shedding causes endometrium to outgrow blood supply. Tissue breaks down from uterus

INVESTIGATIONS

- FBE(Hb), ESR/CRP, UCE, TFT, Blood group, Coagulation profile, beta HCG
- Hormonal profile
- LH, FSH, prolactin, testosterone
- CST
- TV U/S
- Endometrial sampling
- UPT

DUB

MANAGEMENT

- Antifibrinolytic agents
- Tranexamic acid antifibrinolytic agent on heavy days of bleed usually during first 5 days (1g 3-4 times/day)

- NSAID's
- Mefenamic acid on heavy days of bleed (1g 3 times/day)
- Mirena
- Most efficaceous hormonal treatment
- Brings endometrial atropy
- Beneficial for both ovulatory and anovulatory
- COC
- Beneficial for both ovulatory and anovulatory
- Regular/ High dose COC can be given
- Oral progestogens
- MPA for 10 days from days 15- 25 of luteal phase Not beneficial for ovulatory
- Danazol
- GnRH analogues
- Iron therapy if anaemic

DUB

SURGERY

INDICATIONS

- Extreme symptoms like pain
- Failure of medical treatment
- If she requests

TYPES

- Endometrial ablation
- Hysterectomy

ACUTE MENORRHAGIA

PUBERTY MENORRHAGIA

- Between puberty and 19 years

MANAGEMENT

In severe

- I/V estrogen (Premarin- 25mg) followed with 7-10 days of progestin

If moderate

- Norethisterone 15mg till bleeding stops
- Maintenance dose until she has 3-4 weeks free of bleed.

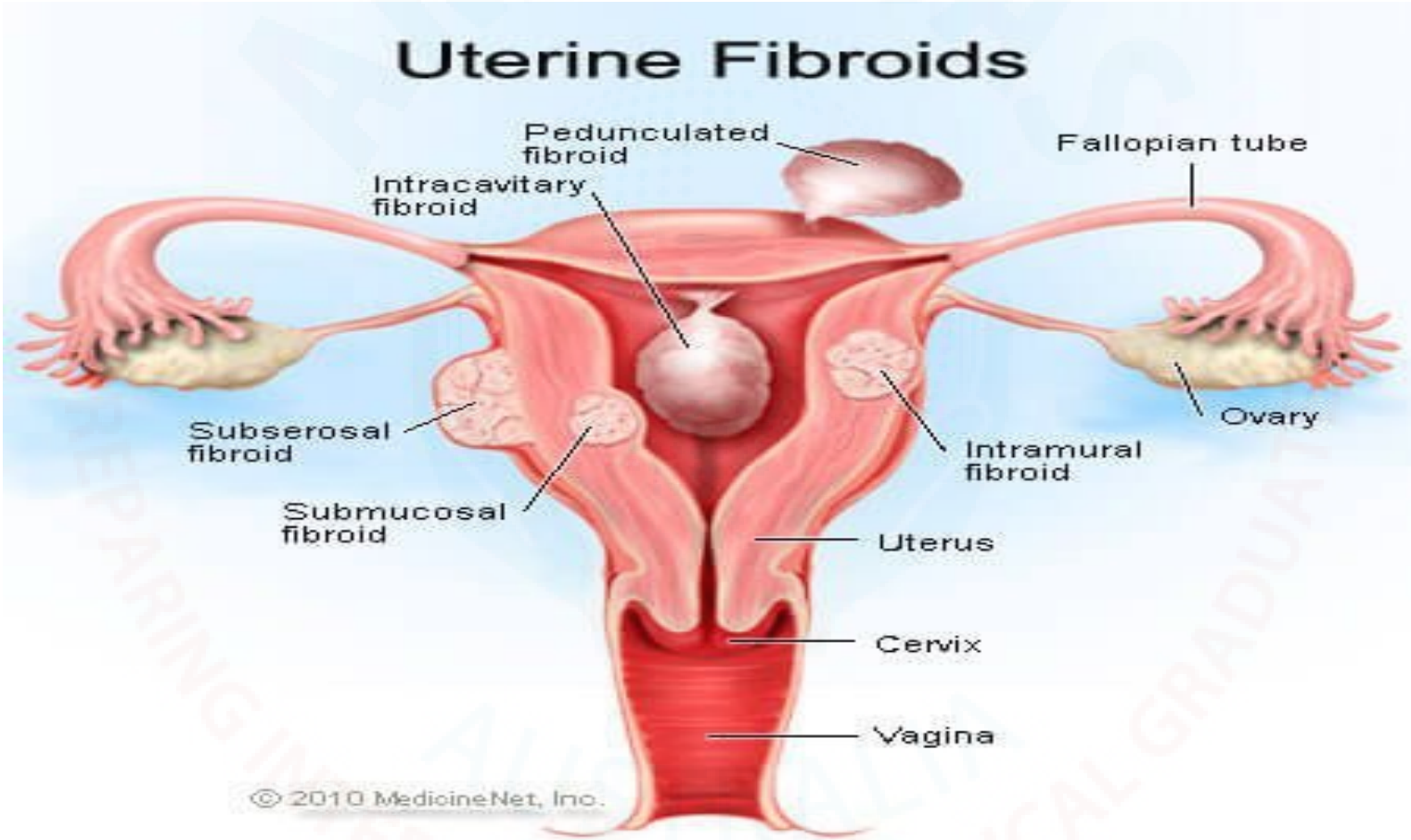
FIBROIDS

Benign uterine tumours which are estrogen dependent

TYPES

- Sub mucosal– most common type to produce menorrhagia
- Intramural– most common type
- Subserosal
- Intracavitary
- Pedunculated

FIBROIDS


Uterine Fibroids
Pedunculated fibroid
Intracavitary fibroid
Fallopian tube
Subserosal fibroid
Submucosal fibroid
Intramural fibroid
Ovary
Uterus
Cervix
Vagina
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FIBROIDS

SYMPTOMS

- Asymptomatic
- Menorrhagia
- Dysmenorrhea
- Pelvic discomfort
- Pressure symptoms

INVESTIGATION

- U/S

FIBROIDS

COMPLICATIONS

During pregnancy

- Miscarriage
- Malpresentation and abnormal lies
- Premature labour
- Red degeneration

(carneous degeneration usually in mid trimester due to bleed in the center of fibroid. Presents with fever, severe pain and local tenderness. Treatment is strong analgesics after U/S. Nearly always settles without further problems.)

- PPH.
- Anaemia
- Infertility
- Pressure symptoms
- Torsion if pedunculated

FIBROIDS

MANAGEMENT

MEDICAL

- COC
- Makes period lighter, regular and shorter
- Dysmenorrhoea comes down
- Progestogens
- Shrinks fibroids
- GnRH analogues
- Reduce size of fibroids. Causes medical menopause. Should not be continued for more than 6 months
- Danazol
- Causes medical menopause. Not to be continued after 6 months due to virilisation

FIBROIDS

SURGERY

Indications

- Excessively enlarged uterus
- Pressure symptoms
- Failure of medical treatment
- Infertility

FIBROIDS

TYPES OF SURGERY

Myomectomy

- Fibroids alone removed

Complications of myomectomy

- Excessive bleeding necessitating hysterectomy
- Scar rupture in next pregnancy
- Recurrence

Uterine artery embolization

- Feeding artery of fibroid identified and blocked by injecting fine particles under imaging guidance

Endometrial ablation

- Done in women who have completed their families and having small submucosal fibroids

Hysterectomy

- In women who have completed their family

FIBROIDS

In pregnant women with fibroid

- observe and refer to specialist

If non pregnant

- uterine size<14 weeks and asymptomatic

  observe

If non pregnant

- uterine size>14 weeks

  myomectomy after GnRH to reduce size

  if completed family- hysterectomy

AMENORRHOEA

Physiological

Before puberty/ pregnancy/ lactation/ menopause

Iatrogenic

Family planning methods/ hysterectomy

Pathological

Can be primary/ secondary

Primary Amenorrhoea

If periods does not occur by15 years of age or 3 years post thelarche

Causes

- genital malformations
- ovarian disorders
- pituitary tumours
- hypothalamic disorders
- chromosomal abnormalities

First to observe is the presence or absence of secondary sexual characters especially breast development

AMENORRHOEA

If normal

- Mullerian duct agenesis(uterus+ vagina absent)
- Mullerian duct dysgenesis
- (uterus absent and vagina at different developmental stage)
- Cervical agenesis
- Imperforate hymen
- Transverse vaginal septum
- Androgen insensitivity syndrome
- Constitutional delay (menarche in mom and sister if delayed)

If absent short stature

Turner's syndrome

- Congenital hypothyroidism

normal stature

- Kallmann's syndrome
- True gonadal dysgenesis

Abnormal distribution of 2ry ch: (masculinisation)

- Congenital adrenal hyperplasia
- Androgen secreting ovarian tumours

Imperforate hymen

- Cyclical recurrent abdominal pain
- Can present with bluish discolouration and distended vagina
- Can present as suprapubic mass with or without urinary symptoms

Treatment

- Hymenotomy

TRANSVERSE VAGINAL SEPTUM

- A horizontal wall of tissue that forms during embryologic development creating a blockage in the vagina
- Some women can have a small hole called fenestration in the septum through which menstrual blood can flow out
- Otherwise blood will pool in the vagina causing abdominal pain
- Symptoms include prolonged bleeding days or abdominal pain
- Treatment is resection of the septum

ANDROGEN INSENSITIVITY

- 46XY
- Has female external genitalia
- Breast development is normal
- Has testes producing androgens located intra abdominally or in labia or inguinal canal
- Uterus absent with short vagina
- Treatment- removal of testes, oestrogen replacement therapy , vaginoplasty

TURNER'S SYNDROME

Chromosomal abnormality- 45 XO

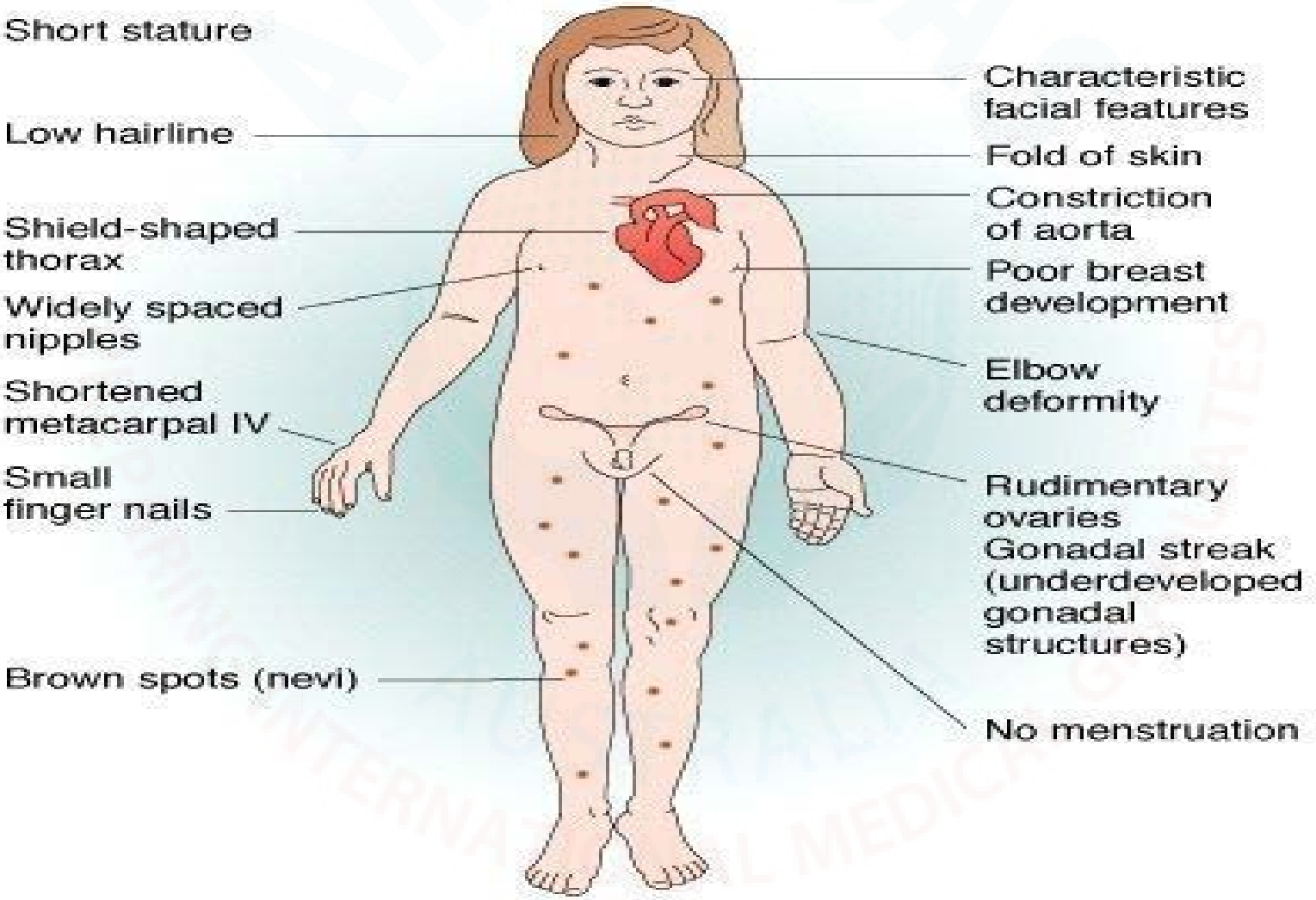
Features

- Short stature, webbed neck, broad chest with widely spaced nipples, delayed puberty, underactive thyroid, bicuspid aortic valve, coarctation of aorta and learning disabilities.
- Ovaries are streaked with connective fibrous tissue
- Uterus and vagina normal

Treatment

- Hormonal therapy with growth hormone and hormone replacement therapy

TURNER'S SYNDROME



KALLMANN'S SYNDROME

- Autosomal dominant inheritance affecting **both males and females due to decreased GnRH**

Features

- **Anosmia**

Treatment

- **Hormonal therapy**

TRUE GONADAL DYSGENESIS

- Chromosomal anomaly
- 46 XX Also called XX pure gonadal dysgenesis
- Person is externally female with streak gonads
- Investigation shows elevated gonadotropins
- Do karyotyping and ultrasound which shows rudimentary uterus and streaked gonads
- Treatment – surgical removal of gonads as they carry high risk of developing tumours and then give hormonal replacement therapy

TRUE GONADAL DYSGENESIS

46,XX pure gonadal dysgenesis

- Features:
  - normal female external genitalia
  - normal müllerian ducts with absence of wolffian duct structures
  - a normal height
  - bilateral streak gonads
  - sexual infantilism
  - normal 46,XX karyotype
- streak gonads →elevated serum gonadotropins
- Management of 46,XX "pure" gonadal dysgenesis:
  - cyclic hormone replacement with estrogen and progesterone.
  - growth is basically normal so GH is not needed
- possibly autosomal recessive trait

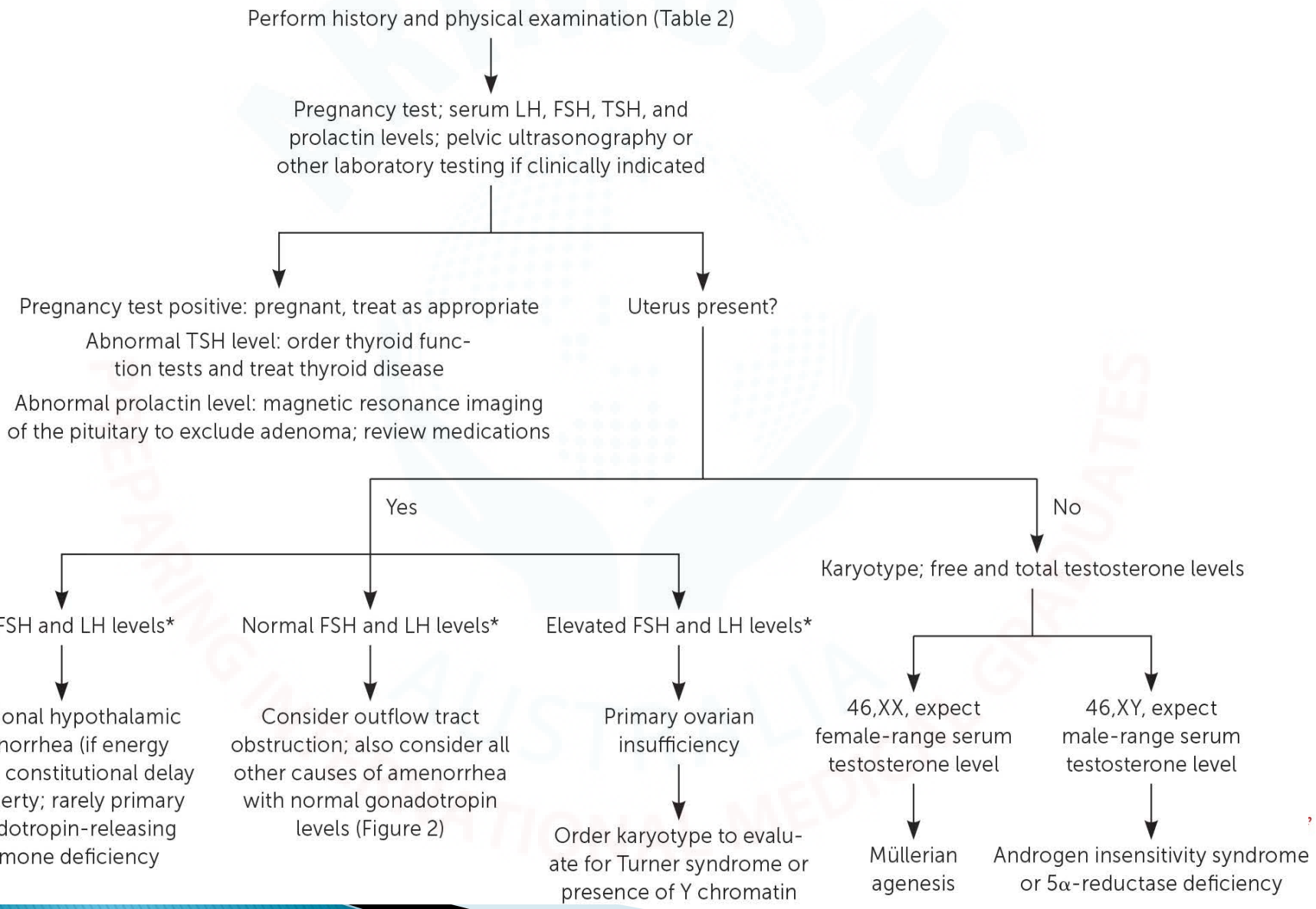
OU MEDICAL CENTER

PRIMARY AMENORRHEA

Investigations

- Look for secondary sexual characters
- If absent
- Karyotyping, TFT and hormonal profile
- If present
- U/S and hormonal profile

PRIMARY AMENORRHOEA



AMENORRHOEA

SECONDARY AMENORRHOEA

If periods **absent for 3 months if regular and 6 months if irregular** after established menstruation

CAUSES

- Pregnancy
- Menopause
- Lactation
- Metabolic like
  - Unstable DM
  - Renal failure
  - Hepatic failure
  - Hypo/hyperthyroidism
- Hypothalamic
  - Eating disorders(anorexia)
  - Strenuous exercise
  - Emotional stress
  - Illicit drugs

AMNERROHEA

- Pituitary
- Micro/macroadenoma
- (hyperprolactinemia)
- Pituitary infarction(Sheehan's)
- Ovarian
- PCOS
- Primary ovarian insufficiency
- Uterine
- Asherman's syndrome

HYPER PROLACTINEMIA

Causes

- pituitary adenoma- micro/macro
- hypothyroidism(elevated TRH causing thyrotroph and lactotroph hyperplasia)
- anti dopaminergic medications

Symptoms

galactorrhoea
headache, blurred vision if adenoma
amenorrhoea

Causes amenorrhoea as prolactin inhibits GnRh which leads to low LH and FSH and thereby anovulation.

Investigation

- Serum prolactin
- MRI/ CT brain
- TFT

Treatment

- Microadenoma- with cabergoline/ bromocryptine
- Macroadenoma- trans sphenoidal surgical removal
- Hypothyroidism- thyroxine
- Change antidopamineric medication

SHEEHAN'S SYNDROME

Hypopituitarism due to post partum haemorrhage due to hypo perfusion to pituitary gland due to blood loss or low BP during or after labor

Investigations

- Blood test for pituitary hormones- FSH, LH, prolactin, estradiol, progesterone
- Pituitary stimulation test
- MRI/ CT brain

Treatment

- Replacement of deficient hormones
- Estrogen + progesterone
- LH/ FSH if pregnancy is preferred for ovulation

ASHERMAN'S SYNDROME

Unexplained adhesions after uterine surgery especially D& C

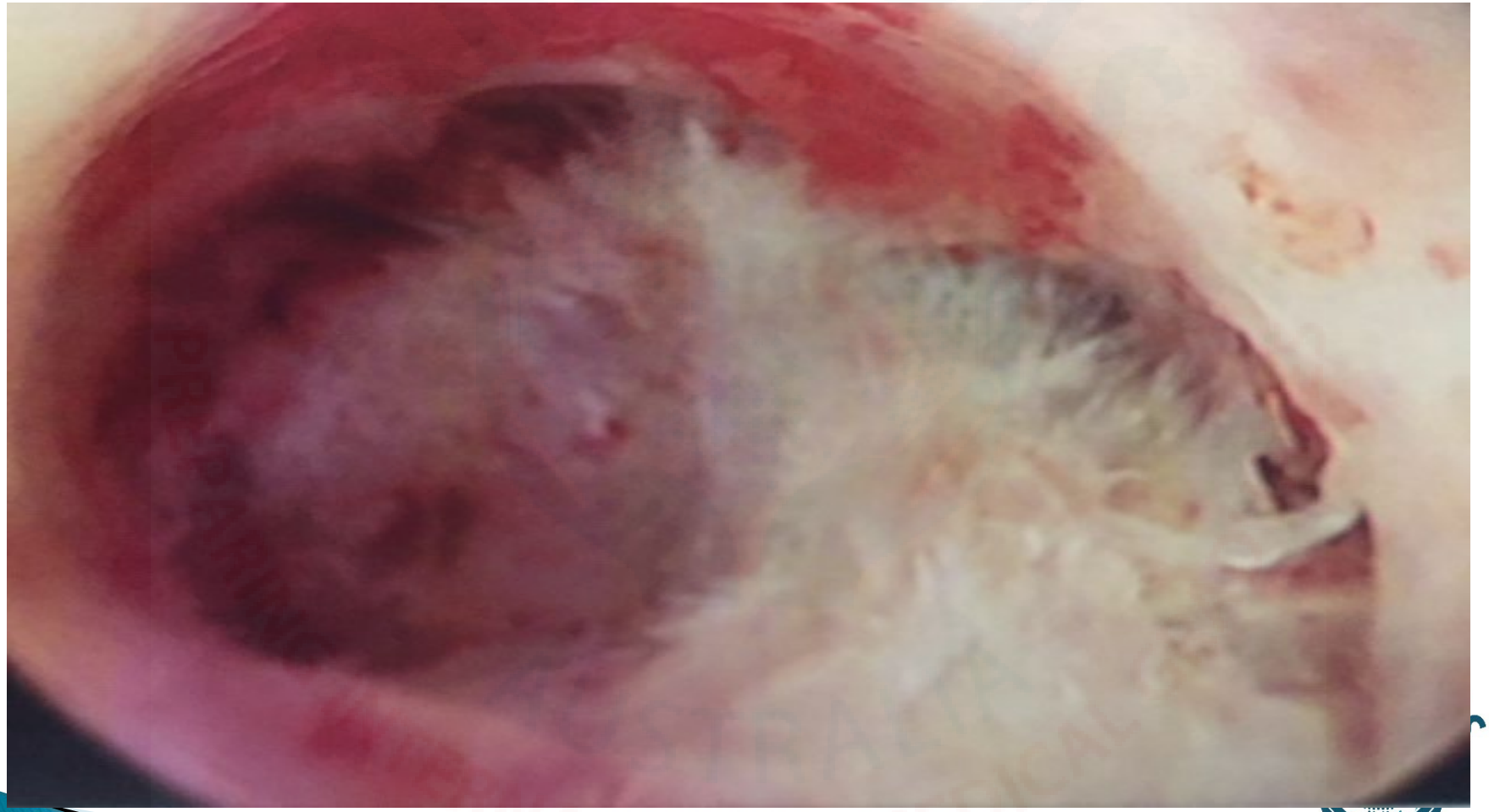
Investigation

- Hysteroscopy

Treatment

- Hysteroscopic removal of adhesions under antibiotic cover
- Uterine cavity kept separated by a small intrauterine catheter for few days
- Oral estrogen to promote endometrial growth

ASHERMAN'S SYNDROME



AMENORRHEA

- Any women in the reproductive age with primary or secondary amenorrhea do Beta HCG first to rule out pregnancy

POST COITAL BLEEDING

CAUSES

- Cervicitis-Chlamydial infection/ gonorrhoea
- Cervical cancer(cardinal symptom)
- Cervical ectropion
- Cervical polyps
- Vaginal sores(herpes/ syphilis)
- Vaginitis(Candidiasis/ bacterial vaginosis)
- Vaginal cancers
- Atrophic vaginitis
- Endometrial cancer
- PID
- Trauma
- Bleeding disorders
- Anticoagulants

INVESTIGATIONS

- Basic bloods
- HPV screen
- STI screen
- Colposcopy

PCB

In premenopausal patients

- with single episode PCB, if cervix is healthy on gynaecological assessment, do co- test
- If CST, is normal, do STI screen for Chlamydia
- If negative, no further test

- if recurrent or persistent refer for specialist colposcopy even if CST and STI screen is negative

PCB

If post- menopausal single episode or recurrent PCB

- gynaecological assessment by specialist which may include colposcopy regardless of test results

CERVICAL ECTROPION

- Also called cervical erosion
- Due to migration of endocervical cells into ectocervix under estrogenic influence
- Can be found in adolescents, pregnancy and women on COC

SYMPTOMS

- Usually asymptomatic
- Mucosal discharge
- Dyspareunia
- Post coital bleed
- Intermenstrual bleed

SIGN

- Seen as red ring around the cervical os

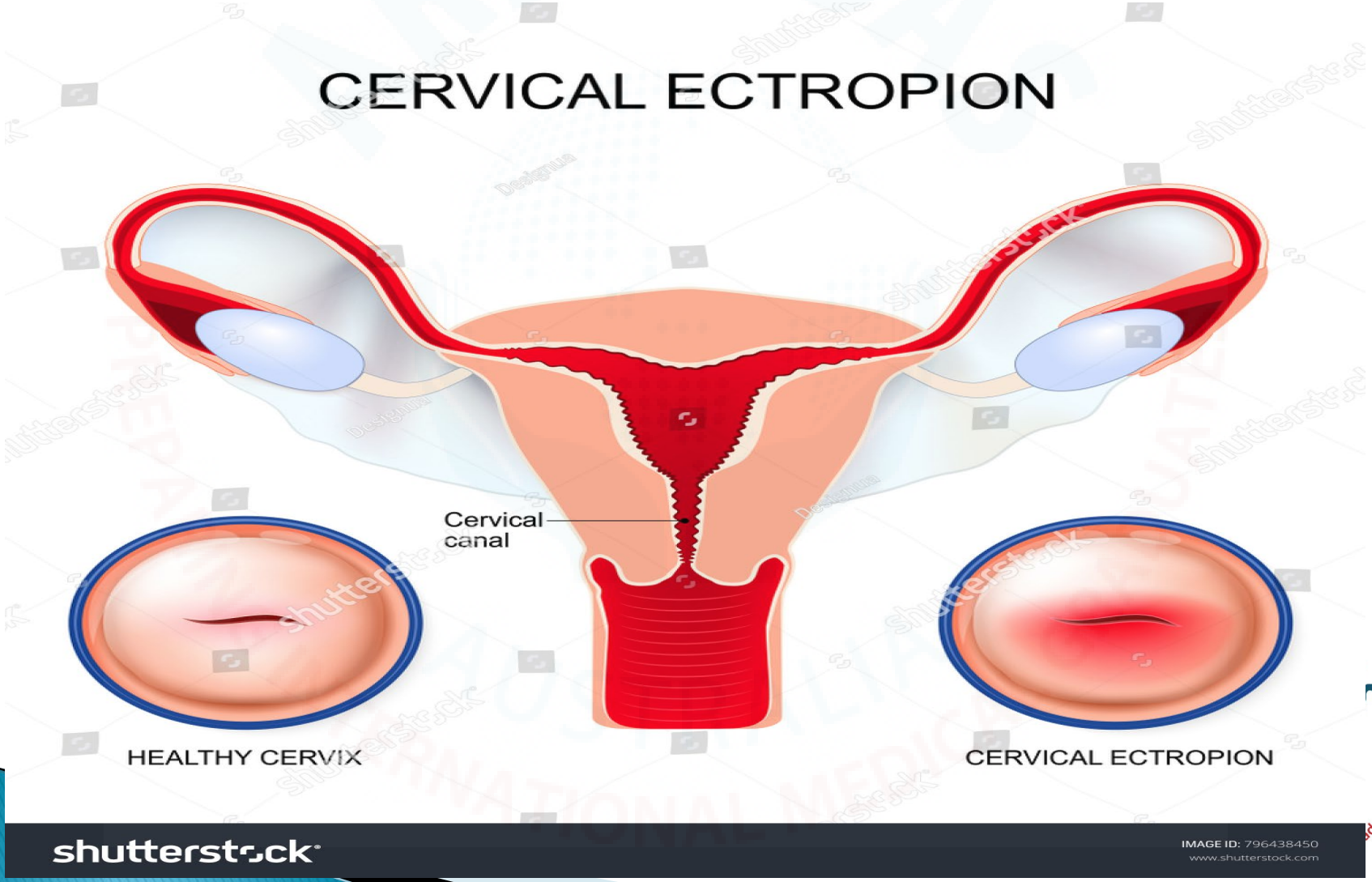
INVESTIGATION

- HPV screen if due

TREATMENT

- Can be left alone if asymptomatic
- Otherwise, cauterization by diathermy or cryosurgery

CERVICAL ECTROPION



CERVICAL ECTROPION

MCQ

- 53 year old Jenny presents to your practice with vaginal bleeding after sexual intercourse 7 hours ago. She has not had menses for past 18months. She had a normal cervical cancer screen12 months ago. She has no other symptoms and is otherwise healthy. What could be the most likely cause of post coital bleed
- A Endometrial cancer
- B Cervical cancer
- C Cervical polyp
- D Cervical ectropion
- E Vaginal atrophy

MCQ

- **Answer – E**

POST MENOPAUSAL BLEEDING

Bleeding after 1 year of menopause

Causes

- atrophic vaginitis(common cause)
- endometrial hyperplasia
- cervical/endometrial polyp
- Ca cervix
- Ca endometrium
- Bleeding disorders
- Anticoagulants

PMB

ATROPHIC VAGINITIS (vaginal atrophy)

Cause

decreased estrogen after menopause

Symptoms

- Spotting or bleeding usually brownish, dyspareunia, abnormal yellowish brown non-offensive vaginal discharge, itching, dryness

Examination

- Thin, dry, atrophic vagina with diffuse erythema

Treatment

- Do transvaginal ultrasound
- Local estrogen in the form of creams or gels or tablets pessaries
- Soothing creams- moisturisers/ lubricants
- MHT if other signs of menopause and if no C/I

PMB

ENDOMETRIAL HYPERPLASIA

- Endometrial thickness if >5mm

Cause

- Unopposed estrogen stimulation in the absence of progestogen

Risk factors

- Age> 35
- Nulliparity
- Early menarche
- Late menopause
- PCOS, DM
- Obesity
- Smoking

TYPES

- Benign endometrial hyperplasia
- Endometrial intraepithelial neoplasia (EIN)
- Endometrial adenocarcinoma

ENDOMETRIAL HYPERPLASIA

INVESTIGATION

- Transvaginal U/S
- Endometrial sampling (investigation of choice)

Chance of endometrial cancer is 7%

TREATMENT

- If benign
- Oral/ vaginal progestogens
- Mirena
- If atypical
- Hysterectomy

MCQ

In which one of the following women groups, endometrial hyperplasia is more likely

- A An ovulating woman
- B An obese, diabetic woman
- C A woman on OCP
- D A woman on Depo MPA
- E A woman with Mirena

MCQ

Answer

- B

PCOS

CAUSE

- **Exact cause unknown**
- Persistent elevation of LH leading to arrest of follicle development
- Runs in families
- Smoking predisposes
- Incidence- 5-10%

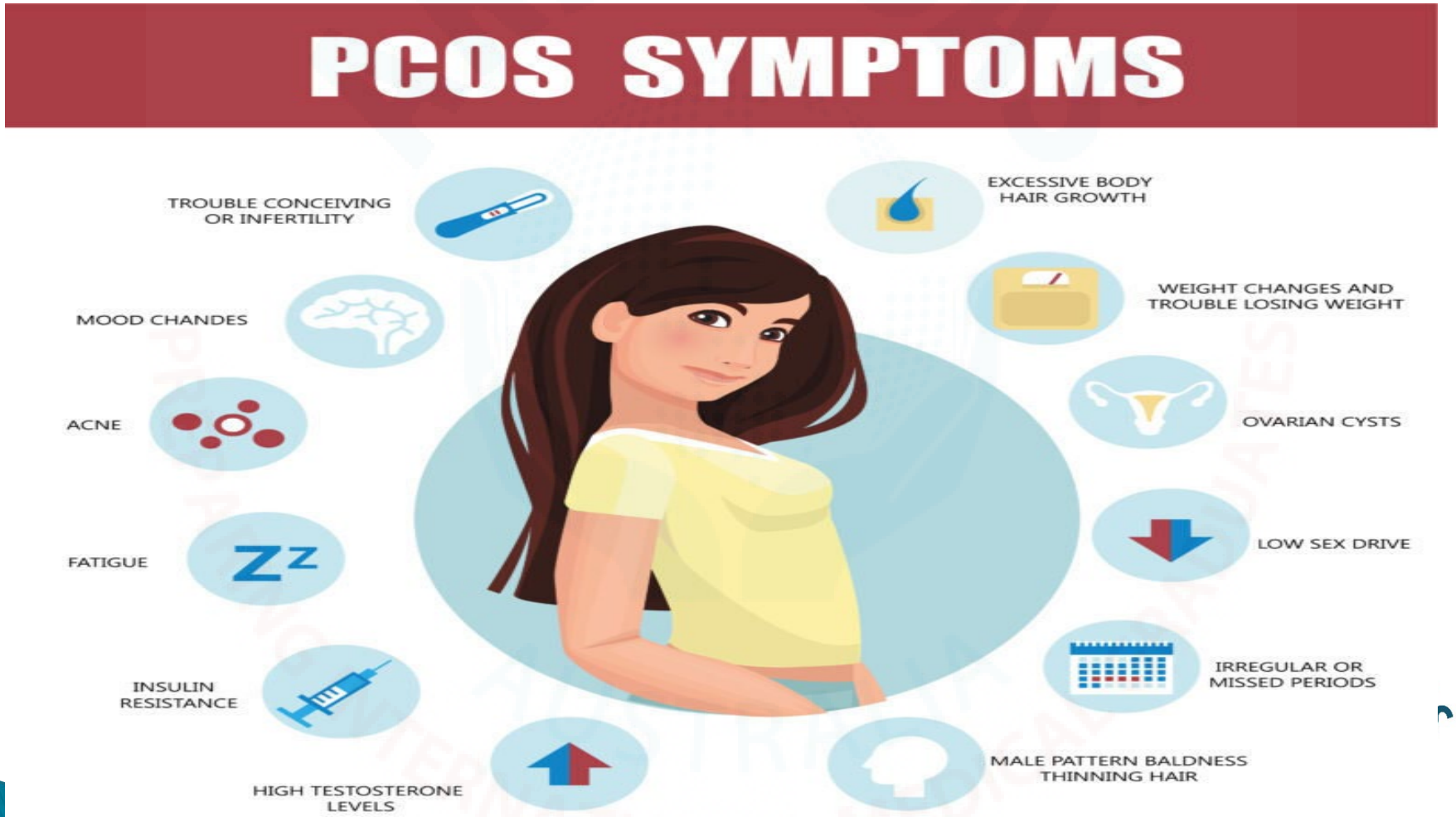
PRESENTATION

- **amenorrhoea or irregular cycles**
- **infertility**

Associated features

- **Hirsuitism or male pattern alopecia, acne, acanthosis nigricans**
- **Metabolic features-obesity, DM, dyslipidemia, hypertension, cardiovascular disorders, endometrial cancer, sleep apnoea**
- **Psychological symptoms-anxiety, depression, eating disorders**

PCOS


PCOS SYMPTOMS
TROUBLE CONCEIVING OR INFERTILITY
MOOD CHANDES
ACNE
FATIGUE
INSULIN RESISTANCE
HIGH TESTOSTERONE LEVELS
EXCESSIVE BODY HAIR GROWTH
WEIGHT CHANGES AND TROUBLE LOSING WEIGHT
OVARIAN CYSTS
LOW SEX DRIVE
IRREGULAR OR MISSED PERIODS
MALE PATTERN BALDNESS THINNING HAIR

PCOS

INVESTIGATIONS

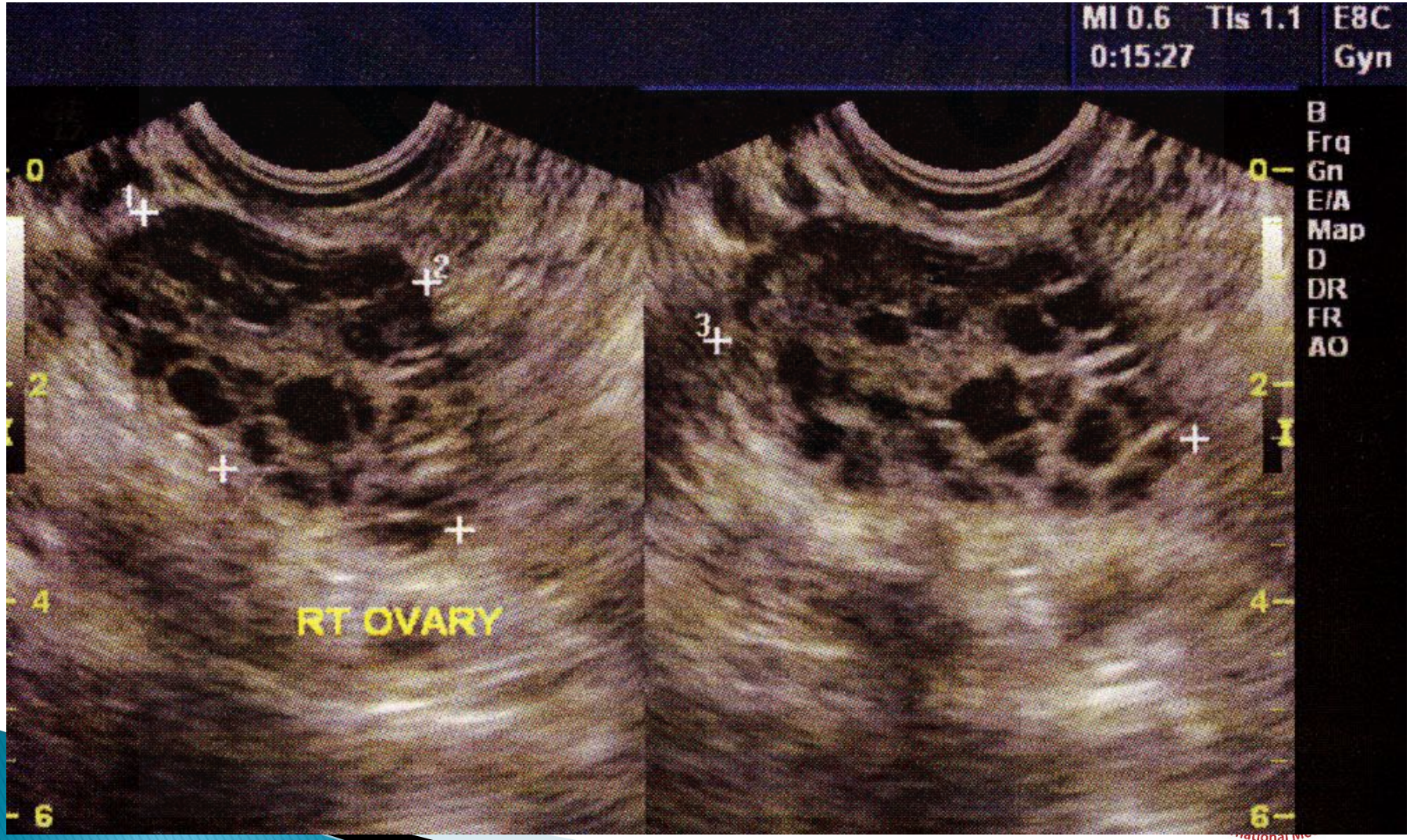
Blood

- LH: FSH >2:1
- Total/ free testosterone elevated
- Raised dehydroepiandrosterone (DHEA-S)
- OGTT, FBS
- S Lipid profile

Ultrasound

- >10 antral follicles in one or both ovaries 2-9 mm in diameter
- Called string of pearls appearance or necklace pattern

PCOS



PCOS

Rotterdam's criteria

Any 2 out of 3 should be present to make a diagnosis

- Oligomenorrhoea (cycles more than 35 days apart but less than 6 months) or anovulation
- Hyperandrogenism
  clinical (hirsuitism or less commonly male pattern alopecia) or
  biochemical (raised FAI/ free testosterone)
- Polycystic ovaries on ultrasound

- In adolescents who had menarche within 2 years all 3 criteria should be met

PCOS

MANAGEMENT

Lifestyle modifications for 6 months

- Weight reduction by even 5% reduction can regularize peroids and ovulation, halve the risk of DM

Management symptom wise

Irregular periods

- Low dose COC- can regularize periods, decreases acne, provides contraception

Oligo or amenorrhoea

- Intermittent progestogens 10-14 days every 3 months to induce withdrawal bleed which protects endometrium from hyperplasia
- Metformin

Hirsuitism

- Cosmetic therapy- first line(laser recommended)
- COC - first line medical treatment
- Eflornithine cream
- Metformin may provide some benefit

PCOS

Infertility

First line

- LSM in women <35years with BMI >25
- Letrozole- first line medication replacing clomiphene. Aromatase inhibitor thereby inhibiting estrogen resulting in high levels of FSH which stimulates ovarian follicles to develop and mature and thereby increasing chance of ovulation Also improves endometrial receptivity which helps implantation
- Clomiphene citrate- second line medication if BMI is more than 30-32
- Metformin- increases ovulation. Can be used alone if BMI is less than 30- 32
- Gonadotropins- causes ovulation

Second line

- Laparoscopic ovarian drilling

PRIMARY OVARIAN INSUFFICIENCY

Loss of ovarian function before 40 years

DIAGNOSIS

requires FSH levels in menopausal range on 2 occasions at least 4 to 6 weeks apart in women less than 40 years after more than 4 months amenorrhoea

CAUSES

- Idiopathic
- Genetic causes like Turners
- Autoimmune like Addison's and thyroid autoimmunity
- Iatrogenic like radiotherapy or chemotherapy to ovaries
- Smoking
- Family history

SYMPTOMS

- Similar to menopause due to decreased oestrogen like hot flushes, heavy sweating, mood swings, dryness of vagina

PRIMARY OVARIAN INSUFFICIENCY

RISKS

- Infertility
- Osteoporosis
- Accelerated cardiovascular disease

INVESTIGATIONS

- FSH levels >40 IU/L on 2 occasions 4 to 6 weeks apart
- Beta-HCG
- TSH
- Transvaginal Ultrasound
- DEXA

PRIMARY OVARIAN INSUFFICIENCY

TREATMENT

- MHT

Cyclical or sequential therapy in women who prefer monthly bleeds or continuous combined in those who do not prefer monthly bleeds

- COC

Additional advantage of contraception

MCQ

- A 37 year old woman presents with secondary amenorrhoea of 7 months. Her BMI is 24. On lab studies she has FSH level of 55 U/L (N- 2-8U/L), LH 54U/L (elevated) and estradiol the lower limit of normal. A repeat labs after 4 weeks also shows the same results. Serum prolactin is normal UPT is negative,. On U/S each ovary has 3-4 cysts. She wants to become pregnant in future. Which is the most appropriate management of her condition
- A Minipills
- B MHT
- C OCP
- D Metformin
- E Danazol

MCQ

- **Answer- B**

MITTELSCHMERZ

- Ovulation pain due to rupture of Graffian follicle
- Mid cycle pain
- Caused by peritoneal irritation by blood and fluid released during rupture and spasm of tubes
- Deep pain in iliac fossa relieved by leaning forward and supporting lower abdomen. Patient otherwise well.

Management

- Reassurance
- Analgesics
- Hot packs
- If recurrent and severe, give COC after U/S

BENIGN OVARIAN CYSTS

- **Age is usually between15-25 years**

TYPES

- **Functional- <5cm** in size. Follicular or corpus luteum cysts
- Endometriomas
- Cystadenomas
- Dermoid
- PCOS

OVARIAN CYST

Clinical features

- Asymptomatic
- Menstrual abnormalities
- Dysmenorrhoea
- Abdominal pain
- Pressure symptoms

Investigations

- **Trans vaginal U/S**
- **Colour Doppler U/S**
- **CA 125 tumour marker**

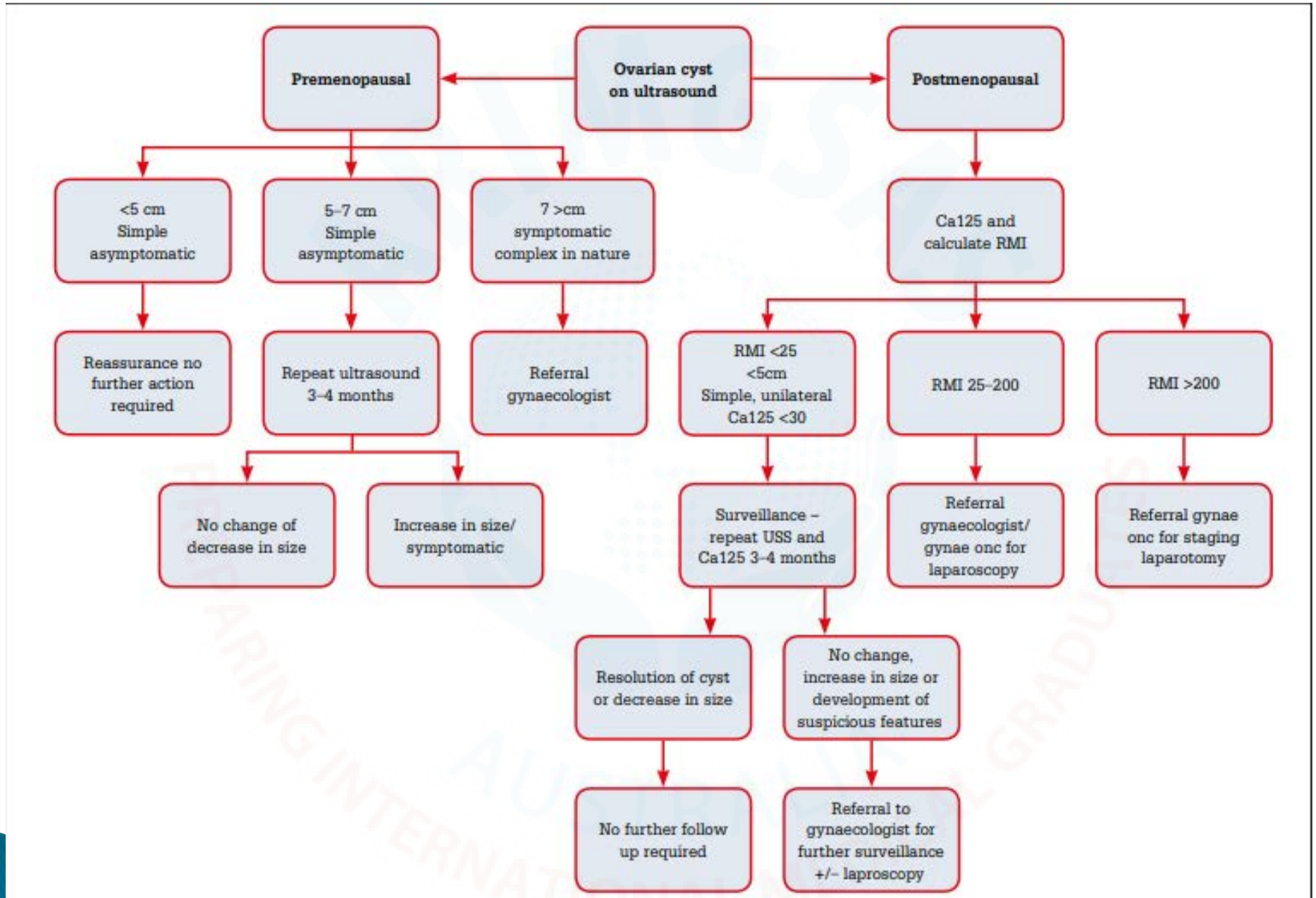


Figure 1. Approach to the management of ovarian cysts[1,2,15,21]

OVARIAN CYSTS

In pregnancy if symptomatic

- Do aspiration/ lap excision after 14 weeks

OVARIAN CYSTS

RUPTURED CYST

- Majority asymptomatic
- If ruptured, sudden onset of pain in the iliac fossa, nausea, vomiting
- Pain settles in few hours time

Signs

- Tenderness and guarding in the iliac fossa

Investigation

- Color Doppler U/S

Management

- Bed rest + Analgesics
- May need U/S guided aspiration if portions of cyst left behind
- Laparoscopy or laparotomy in cases of severe haemorrhage

OVARIAN CYSTS

TORSION OF OVARY

- Medical emergency
- Can mimic acute appendicitis and ruptured ectopic

Symptoms

- Severe cramping abdominal pain usually of sudden onset
- Nausea and vomiting

Signs

- Shock
- Palpable round mass usually towards midline of abdomen

Investigations

- Colour Doppler U/S

Treatment

- If ovary is viable
  laparoscopic untwisting and possibly oophoropexy
- If nonviable
  oopherectomy

DYSMENORRHEA

Menstrual pain associated with menstrual changes

TYPES

Primary

- Starts within 2-3 years of menarche and usually subsides by 20 years
- Caused by PG secretion which leads to painful uterine contractions and associated symptoms like nausea and diarrhea
- No organic pathology
- Pain characteristics
  - Lower abdominal cramping pain
  - Starts 1-2 days prior to period
  - Becomes less with onset of periods

DYSMENORRHOEA

MANAGEMENT

- Reassurance
- Lifestyle modifications
- 1st line

  NSAIDS (acts by inhibiting PG secretion)
- 2nd line

  COC

  May take up to 3 cycles for effect
- Vitamin B1and Magnesium

DYSMENORRHOEA

SECONDARY

Underlying pathology present

- Age is usually over 30 years
- **Pain- dull pain 1-2 weeks before periods, becomes severe with periods and could be very severe towards end of periods**

CAUSES

- **Endometriosis- most common**
- **PID**
- **IUCD**
- **Fibroids usually submucous**
- **PCOS**
- **Ovarian tumours**
- **Uterine polyps**
- **Pelvic adhesions**
- **Advanced cancers**

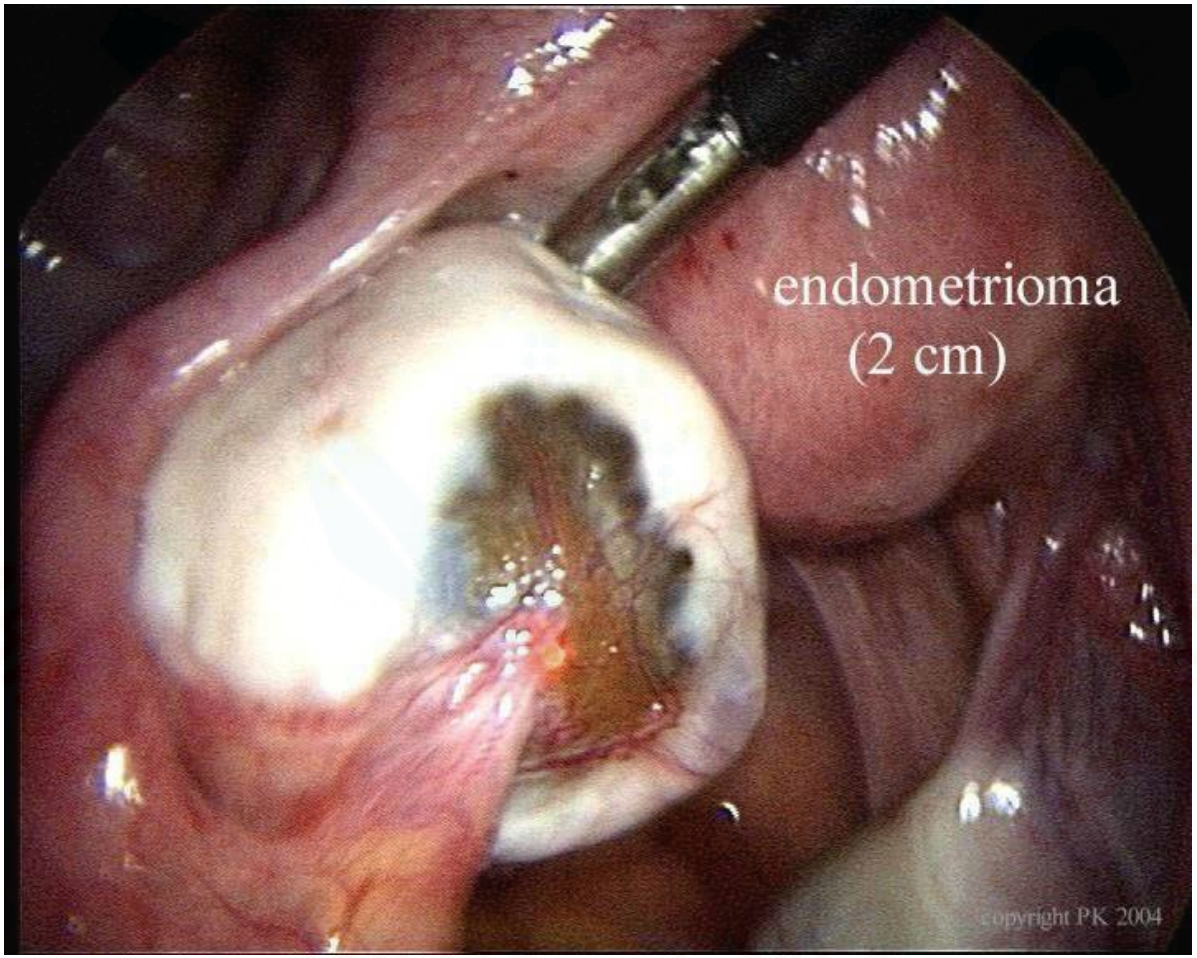
ENDOMETRIOSIS

Endometrium at sites other than uterus

SITES

- Ovaries(most common site)
- POD
- Broad ligament
- Uterosacral ligament
- Recto sigmoid colon
- Bladder
- Distal ureter
- Appendix (least common)
- Adenomyosis- when endometrium invades myometrium

ENDOMETRIOSIS



ENDOMETRIOSIS

CAUSE

- Unknown
- Could be due to retrograde flow of menstrual blood through tubes
- Transfer through blood and lymphatics

SYMPTOMS

- Asymptomatic
- Dysmenorrhoea
- Menorrhagia, intermenstrual bleed
- Pelvic pain
- Defecation pain
- Dyspareunia
- Could present with infertility alone

ENDOMETRIOSIS

EXAMINATION

Uterus

- normal size
- fixed
- retroverted
- mildly tender if adenomyosis

Adnexa

- tender ovarian mass(endometrioma or chocolate cyst)

DRE

- tenderness and nodularity in POD/ uterosacral ligament

INVESTIGATIONS:

- Transvaginal U/S
- Laparoscopy- gold standard

  Both diagnostic and therapeutic

ENDOMETRIOSIS

TREATMENT

MEDICAL

- Basic analgesics- NSAID'S/panadol
- COC
  Hormonal pills continuously for 6 months
- Progestogens -Minipills/Depo MPA/Implanon/Mirena
- GnRH analogues- not more than 6 months
- Danazol- not more than 6 months

SURGICAL

- If medical therapy fails/ infertility
- Laparoscopy- excision of endometrial deposits
- destruction by LASER, cautery
- Hysterectomy with BLSO

PID

TYPES

Acute PID

- Sudden, severe symptoms. **Most important complication of STI's**

Chronic PID

- Produces milder symptoms gradually

COMPLICATIONS

- tubal obstruction
- infertility
- ectopic pregnancy

CAUSE

- Exogenous organisms

  Chlamydia, Neisseria, Mycoplasma genitalis

  STI. Most common.
- Endogenous organisms

  E.coli, Bacteriodes fragilis

  After abortion, D&C, IUCD, recent pregnancy
- Actinomyces

  Could be due to prolonged IUD use

PID

SYMPTOMS

Acute PID

- Fever, severe abdominal pain, abnormal offensive vaginal discharge

Chronic PID

- Mild low back pain, abdominal pain
- Other symptoms
- dysmenorrhea, menorrhagia, intermenstrual bleeding

CLINICAL FEATURES

- Vitals- temperature
- Abdomen
- tenderness in one or the other iliac fossa
- Insp: of vulva and vagina
- mucopurulent discharge
- Speculum
- inflamed red cervix + discharge
- Bimanual:
- CMT positive
- Uterine tenderness
- Adnexal tenderness +/- mass

PID

INVESTIGATIONS

- Routine blood

  FBE, ESR/CRP, UCE, FBS, LFT, STI
- Endo cervical swab or SOLVS

  PCR Chlamydia, Gonorrhoea and Mycoplasma
- Transvaginal U/S
- Laparoscopy- definitive investigation
- UPT for ectopic pregnancy, urine MCS for UTI

PID

TREATMENT OF EXOGENOUS PID

MIld/ moderate(outpatient)

- Ceftriaxone 500 mg I/M or IV stat +
- Doxycycline100mg BD x 14 days +
- Metronidazole 400mg BD orally x 14 days

Severe infection (inpatient)

Cefotaxime 2g IV tds or
Ceftriaxone 2g IV daily +
Azithromycin 500mg I/V daily
Metronidazole 500mg IV BD till afebrile
+
Doxycycline + amoxicillin/ clavulinate PO for 2–4 weeks

PID

If pregnant/breast feeding replace doxycycline with azithromycin

MIld/ moderate(outpatient)

- Ceftriaxone 500 mg I/M or IV stat +
- Metronidazole 400mg BD orally x 14 days+
- Azithromycin 1 gm PO st+
- Azithromycin 1 gm PO 1 week later

If Mycoplasma genitalium give Azithromycin as first line or Moxifloxacin for 14 days

If pregnant, pristinamycin is recommended

No removal of IUD unless not responding to treatment in 72 hours

PID

ENDOGENOUS PID

Mild to moderate

- Doxycycline + Amoxycillin/ clavulinate for 2-4 weeks
- If hypersensitive to penicillin, replace Amoxycillin/ clavulinate with Metronidazole

Severe

Amoxicillin I/V+ Gentamycin I/V + Metronidazole I/V till improvement

Then oral with doxycycline + Amoxycillin/ clavulinate for 2 weeks

For Actinomyces PID

- Amoxycillin 500mg orally TDS+
  Metronidazole 400mg orally BD X14 days
  Remove IUD

PMS

PMS

- PMS diagnosed if symptoms happen 5 days before periods for at least 3 menstrual cycles in a row and ends within 4 days of starting periods
- Physical, psychological, behavioral changes affecting quality of life

Premenstrual dysphoric disorder (PMDD)

- Seriously debilitating PMS. Can affect mental health. Cannot carry out ADL

Symptoms of PMS

Abdominal bloating, irritability, depression, tiredness, headache, weight gain, breast tenderness, sleep disturbances

MANAGEMENT

- Menstrual diary
- Lifestyle modifications (first line)

Diet- complex carbohydrates, green leafy vegies
Exercise
Cut SAD
Limit caffeine
Relaxation techniques- meditation, yoga
Vitamins Ca, Mg, B6 and Omega 3, 6

PMS

Second line

- COC- Use drospirenone containing COC
- SSRI- high dose of citalopram/escitalopram 2 weeks before or all through the cycle
- NSAID- Naproxen, Ibuprofen, Aspirin
- Evening prim rose oil

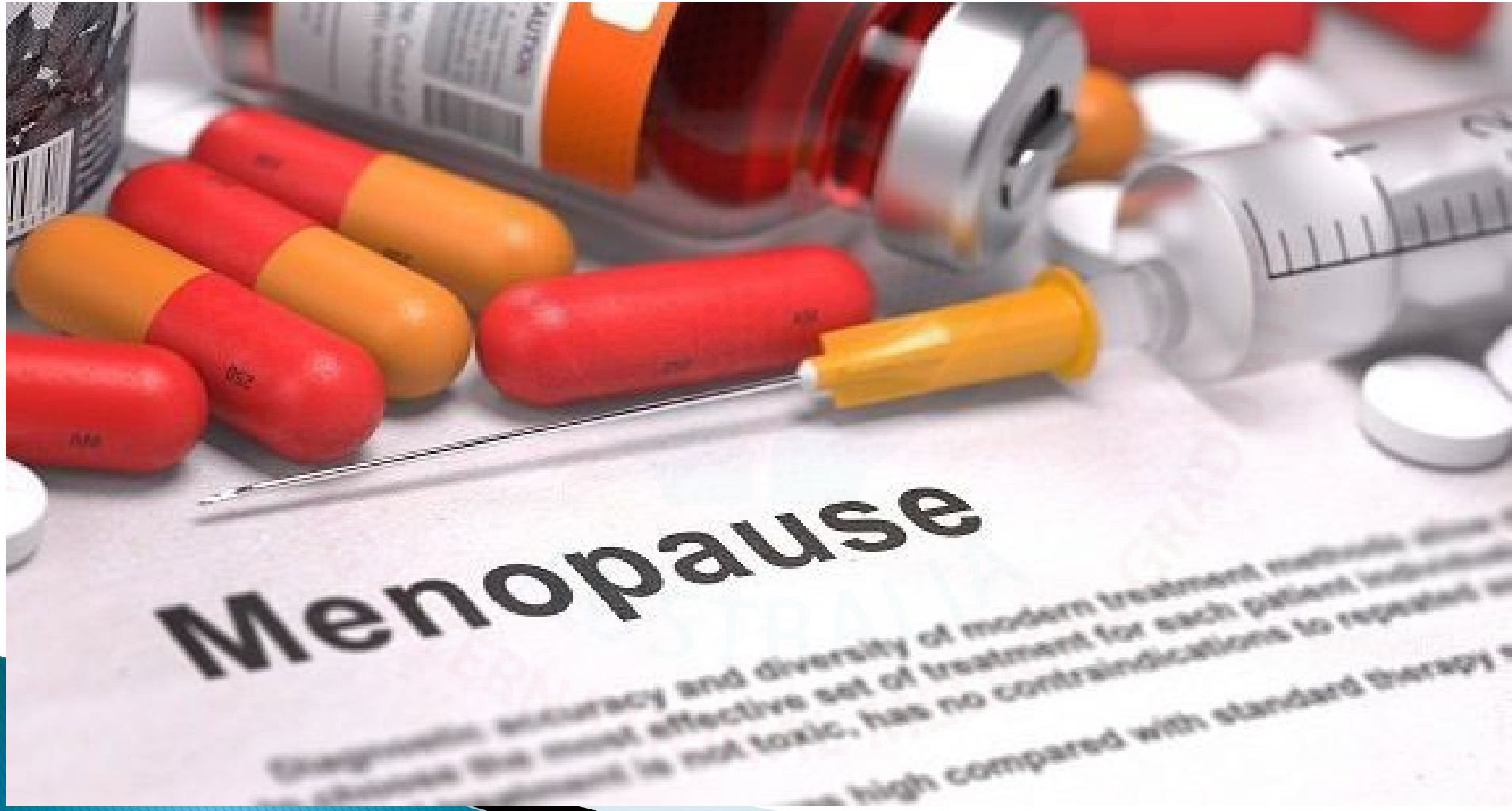
Third line

- GnRH analogues in very severe PMS where other treatments fail

Special circumstances

- PMS+ bloating- drospirinone containing COC
- PMS+ mastalgia -danazol
- PMS+ dysmenorrhea- mefenamic acid

MENOPAUSE



MHT

Peri menopausal

- irregular bleeding+ early menopausal symptoms

Menopausal

- is cessation of periods for 12 months

Post menopausal

- 1year after menopause and thereafter
- Menopause before 45 years is early menopause and menopause before 40 is premature menopause

HORMONAL PROFILE OF MENOPAUSE

- FSH- elevated to 30mIU/ml or above(main indicator)
- LH- elevated
- Estrogen- very low

MHT

Symptoms of menopause

Vasomotor symptoms

- Hot flashes, sweating, more often at night
- Associated with fatigue and sleep disturbances

Psychological symptoms

- Mood changes, depression, irritability, anxiety

Musculoskeletal symptoms

- Vague aches and pains, joint pain, osteoporosis

Urogenital symptoms

- Atrophic vaginitis, atrophic urethritis

Cardiac function

- Increased susceptibility to heart disease

MHT

HRT is now called MHT (Menopausal Hormone Therapy)

Recommendations for MHT

- For alleviation of distressing menopausal vasomotor symptoms
- In primary ovarian insufficiency MHT should be continued until normal menopausal age (51 years)
- Not to be given after 60 years due to risk of VTE and stroke

MHT

CONTRAINDICATIONS

- Age 60 years or older for starting MHT
- Previous DVT
- Previous MI, Uncontrolled HT
- Stroke, Previous TIA
- Breast cancer
- Endometrial cancer
- Undiagnosed vaginal bleeding
- Significant liver disease
- Porphyria/ SLE

MHT

BENEFITS

- Alleviates post /pre menopausal symptoms
- Prevents osteoporosis
- Protects against colorectal cancer

RISKS

- Invasive breast cancer (increased with longer duration of combined MHT and to persist up to 10 years after MHT is stopped. Risks greater for continuous combined than with cyclical MHT)
- Stroke (usually above 60 years)
- DVT
- Gallbladder disease
- Coronary heart disease (usually above 60 years)

MHT

MHT given in 3 patterns

Continuous estrogen + cyclic progestogen

(cyclical or sequential therapy)

Continuous estrogen for 28 days and then progesterone is added during the last 14 days. Given in peri menopausal women and in women during 1st year of menopause. Will get cyclical bleeds.

Continuous estrogen+ continuous progestogen

(continuous combined therapy)

Given in women after 1 year of menopause. Spotting and breakthrough bleeding is common in the first 3-4 months of therapy.

Estrogen alone therapy

In women who had hysterectomy

Role of progesterone is to prevent endometrial hyperplasia associated with estrogen alone

MHT

INVESTIGATIONS

- Basic bloods
- FBE, ESR/CRP,UCE, FBS, LFT, TFT
- Urine routine
- Mammogram and cervical cancer screen should be up to date

MHT

PREPARATIONS AVAILABLE

- Estrogen available as oral or transdermal patches
- Progesterone available as oral/ intravaginal capsule/ Mirena
- Fixed dose combined oral or transdermal patches are also available

MHT

CONTRAINDICATIONS SPECIFIC TO ORAL OESTROGEN

- Risk factors for DVT(obesity, smoking, thrombophilia)
- Risk factors for CV disease (previous CV disease, DM, insulin resistance, obesity, HT even controlled, smoking)
- Elevated triglycerides(can be increased by oral oestrogen increasing risk of pancreatitis)
- Less severe liver disease or gall bladder disease

Here transdermal oestrogen is recommended as it avoids first pass metabolism in liver

Transdermal oestrogen confers less risk of DVT, elevated TG and stroke

MHT

SIDE EFFECTS

- Breakthrough bleed- settles in 8 to 12 weeks
- In cyclical if not settled within 2 to 3 months, increase duration of progestogen
- In continuous combined, increase progestogen dose, change type or route or change to tibolone
- Review in 2 to 3 months. If still present investigate
- Nausea- change to transdermal therapy
- Breast tenderness- reduce oestrogen or progestogen dose
- Initiating therapy with low dose will minimise these side effects

MHT

FOLLOW UP

- Review in 6 to 8 weeks and then at 6 months and then every 6 – 12 months with general health check, breast check
- Mammogram every 2 years
- DXA where indicated
- Vaginal bleed after 6 months of therapy needs further investigations
- Most guidelines recommend using MHT usually for 4 to 5 years. However if menopausal symptoms persist, after analysing risk benefit ratio, she can be continued on MHT beyond 5 years.
- Recommended to stop MHT by 60 years as risk outweigh benefits after this age

MHT

- Women with personal risk or family history of VTE should be given transdermal therapy
- No MHT in undiagnosed vaginal bleed
- In women with less severe liver disease, trans dermal therapy should be preferred
- Migraine is not a contraindication but trans dermal therapy should be preferred
- In women with dryness of vagina or atrophic vaginitis, local oestrogen therapy should be given

MHT ALTERNATIVES

Alternatives to MHT

Non hormonal

- SSRI like citalopram, escitalopram, paroxetine
- SNRI– venlafaxine, desvenlafaxine

  Both of above alleviates vasomotor symptoms but to a lesser degree than MHT
- Gabapentin–equally effective as low dose estrogen for vasomotor symptoms.
- Pregabalin
- Clonidine– mildly effective

MHT ALTERNATIVE

Hormonal alternative

Tibolone

- Synthetic steroid with oestrogenic and progestogenic activity and weak androgenic activity
- Less effective than MHT
- Improves bone mineral density and decreases risk of vertebral and non vertebral fractures
- Given in women after1year of menopause and with intact uterus as an alternative to continuous combined MHT
- Does not increase breast density but increases risk of breast cancer recurrence
- Increases risk of stroke after 60 years of age
- No increased risk of DVT

MHT

Conjugated oestrogens + bazedoxifene

which is a selective oestrogen receptor modulator can be used in postmenopausal women as an alternative to continuous combined MHT

- **Less effective than MHT**
- **Increases hip and spine bone density**

MHT

- Patient with H/o hysterectomy but with hot flushes and mood changes- only estrogen
- Patient with hot flushes, mood changes. H/o breast cancer 5 years back and treated. Type of MHT- NO MHT
- Patient with h/o hot flushes, undiagnosed vaginal bleed- NO MHT
- Patient with vaginal dryness, no other symptoms- local estrogen therapy. NO MHT

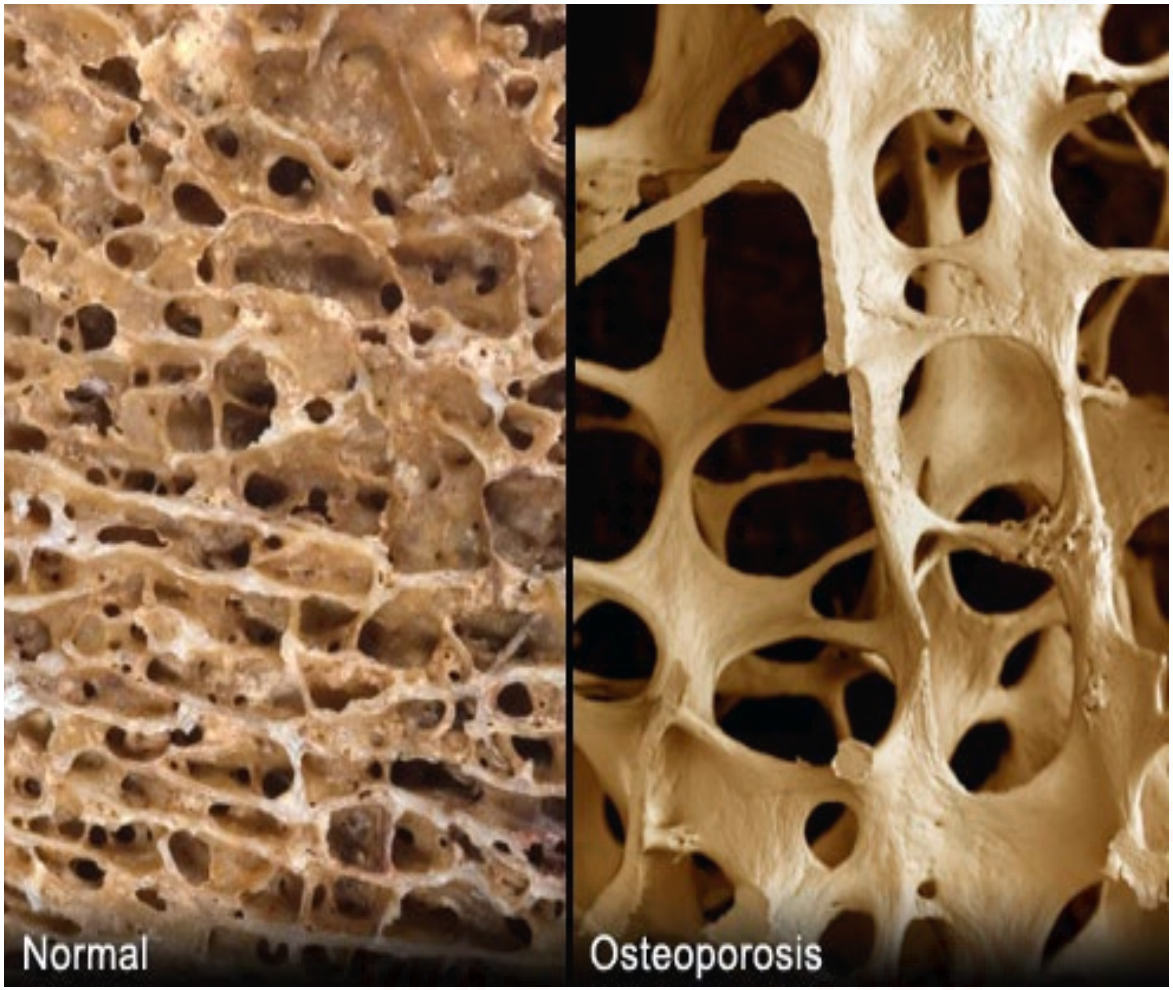
OSTEOPOROSIS

- Very common in post menopausal women
- Causes pain if complicated by fractures
- Presents with fracture or height shrinkage

RISK FACTORS

- Diet- low in calcium
- Low BMI < 19
- Lack of exercise
- Inadequate exposure to sunlight
- SAD and excessive coffee intake
- Medications- glucocorticoids, anticonvulsants like phenothiazines, GnRh, aromatase inhibitors, heparin, Depo, thiazolidinedions, PPI like omeprazole
- Medical conditions- hyperthyroidism, hyperparathyroidism chronic liver or renal disorders, rheumatoid arthritis, coeliac disease
- Menopause
- Physical inactivity
- Family history

OSTEOPOROSIS



OSTEOPOROSIS

INVESTIGATIONS

Blood

- FBE, UCE, TFT, FBS, LFT
- 25 hydroxy Vitamin D

OSTEOPOROSIS

DXA SCAN

- Should not take calcium supplements for at least 24 hours before DXA
- Done at lumbar spine and femoral neck
- 2 scores
- T score- amount of bone that patient have in comparison with young adult of same size and gender with peak bone mass
- -1and above- normal
- -1.1 to – 2.4 is osteopenia
- </= - 2.5 is osteoporosis
- Z score- amount of bone that patient have in comparison to people of her age group and of same size and gender. Useful indicator of secondary osteoporosis
- Z score of – 2 or below- requires investigations for underlying disease to exclude other causes

OSTEOPOROSIS

TREATMENT

Lifestyle modifications

- Calcium rich diet
- Exercise against gravity
- Exposure to sunlight avoiding danger times
- Avoid SAD, excessive coffee
- Attention to fall prevention

OSTEOPOROSIS

MEDICATIONS

- Increases bone density in hip approximately by 1-3% and in spine 4-8% over 3-4 years

Calcium and Vitamin D supplementation

- 1200- 1500 mg/day of calcium
- 800- 2000 IU/day of Vitamin D

OSTEOPOROSIS

Bisphosphonates

- Inhibits bone resorption
- Alendronate- weekly dose
- Risedronate- daily/weekly/monthly dose
- Zoledronic acid- annual infusion for a maximum of 3 years. Vitamin D levels should be corrected to 50nmol/L before giving this
- Side effects of alendronate and risedronate
  gastrointestinal discomfort, reflux oesophagitis, jaw necrosis
- Alendronate and risedronate given for 5 to 10 years in postmenopausal women
  After stopping treatment, do DXA in1 year

OSTEOPOROSIS

Denosumab

- Monoclonal antibody against osteoclast
- Given as 6 monthly injections subcutaneously for 36 months
- No gastrointestinal side effects
- Correct hypocalcemia prior

Romosozumab

- A monoclonal antibody that stimulates osteoblasts and reduces osteo clastic activity
- Given as subcutaneous injection once a month for 12 months
- Typically used for individuals at high risk of fractures

Strontium ranelate

- Given orally 2 grams/day
- Should not be given with calcium supplements
- Contraindication- DVT, prolonged immobilisation

OSTEOPOROSIS

Raloxifene

- Selective oestrogen receptor modulator
- Oestrogen like effect on bone but antioestrogenic for uterus and breast
- Can be considered as second line treatment for postmenopausal women with osteoporosis at risk of breast cancer
- Reduces risk of vertebral fractures

MHT

- In peri or postmenopausal women with osteoporosis especially associated with other menopausal symptoms if no contraindications
- Women under 65 years with T score of -1.8 or less (osteopenia) can be prescribed MHT even if asymptomatic and if post menopausal

OSTEOPOROSIS

Teriparatide

- Is a biological medicine produced by E.coli using recombinant DNA technology which is identical to biologically active parathyroid hormone
- Stimulates bone forming cells or osteoblasts
- Given in women after menopause and also in steroid induced osteoporosis at very high risk of fractures
- Given as daily injections subcutaneously for not more than 18 months

OSTEOPOROSIS

CRITERIA FOR TREATMENT

- Any man or woman with fractures after minimal trauma even if T score is more than -2.5
- No fracture but score < or equal to -2.5 if risk factors are present
- Those aged 70 years or over with t score of -3 or lower
- Osteoporosis due to secondary causes
- Treatment with medications has to be started along with calcium and vitamin D supplementation and life style modifications. Repeat DXA in 2 years or in 1 year if medication is changed

OSTEOPENIA

- T score between -1.1and -2.5 without minimal trauma fracture
- treat with calcium and Vitamin D supplementation and life style modifications
- T score between -1.1 and - 2.5 with minimal trauma fracture
- Give treatment with medications along with calcium and Vitamin D supplementation and life style modifications
- Repeat DXA in 2-5 years

OSTEOPOROSIS

Treatment for people with special circumstances

- All people above 50 years on corticosteroid therapy of 7.5 mg/day for at least 3 months with T score of −1.5 or less has to be given bisphosphonates for the duration of therapy
- First line treatment for steroid induced osteoporosis is alendronate and risedronate with adjuvant Calcium and Vit D
- Second line is zoledronic acid
- Medication in renal impairment- raloxifene or Denosumab

MCQ

- A 62 year old postmenopausal woman presents for review of her osteoporosis treatment. She has been on HRT for past 6 years to manage menopausal symptoms and to prevent bone loss
- A recent DXA scan reveals, T score for lumbar spine vertebra as -1.7 and for femoral neck as - 1.2
- She is asymptomatic with no history of fragility fractures and her serum Vitamin D and calcium levels are normal
- What is the most appropriate next step in her management

A Cease HRT

B Continue HRT

C Switch HRT to alendronate

D Add alendronate to current HRT

E Continue Vitamin D and calcium supplements

MCQ

ANSWER

- B

VAGINAL INFECTIONS

CANDIDIASIS

Incidence- in 20-40 years of age
Rare in pre pubertal and post menopausal
Cause- high estrogen levels
Triggers- DM, other immune deficient states, long term antibiotics/ steroids, high dose COC
Can be sexually transmitted but not considered an STI

Organism

- Candida albicans

Discharge

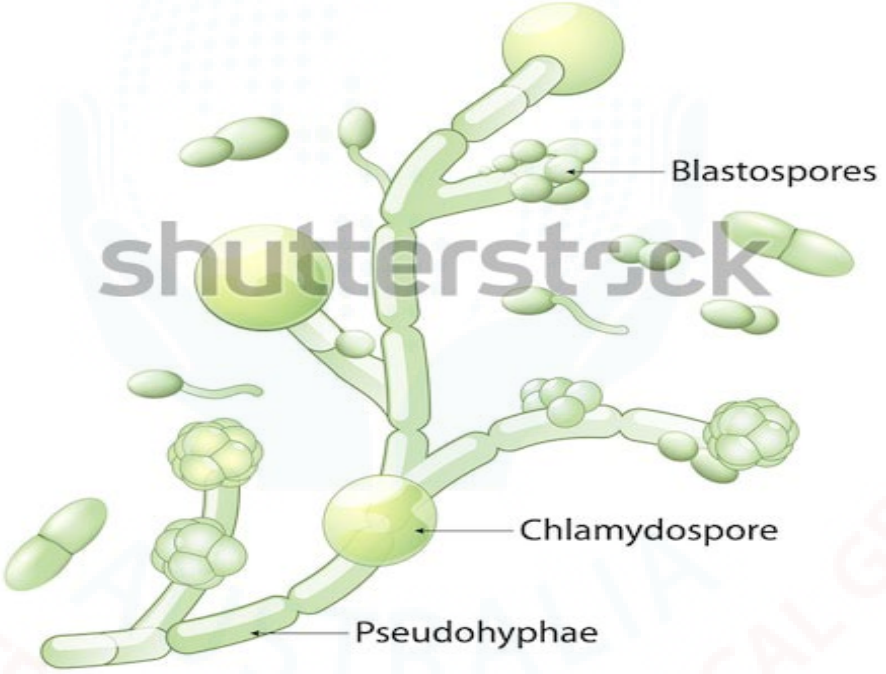
- **Curdy white/ cottage cheese like**
- Itchiness/soreness of vagina, dyspareunia, dysuria

Examination

Erythema and edema of vulva and vagina
Brick red vagina

CANDIDIASIS

Candida albicans



CANDIDIASIS

Investigations

- High vaginal swab for MCS
- Endo cervical swab or SOLVS for Chlamydia/gonorrhea and blood STI screen if she has multiple sexual partners

Treatment

- Polyenes- topical nystatin
- Azoles- imidazoles- topical clotrimazole/ topical miconazole, oral ketoconazole
- Triazoles- oral fluconazole

RECURRENT CANDIDIASIS

- Incidence- 5% of premenopause women
- Definition- 4 or more proven episodes in 12 month time
- Investigation- 3 positive cultures
- Treatment

- Oral Fluconazole for 2 days or
- Oral Ketoconazole for 10 days
- Then suppressive treatment with
- Clotrimazole intravaginally weekly or
- Fluconazole oral weekly or
- Ketoconazole oral daily
- for 6 months
- If on ketoconazole check LFT monthly
- If on fluconazole, check LFT in 6 months

TRICHOMONIASIS

- **Transmission**- sexually. 70% asymptomatic

Discharge- bubbly, profuse, yellowish green fishy, malodorous discharge

- Soreness, itching of vagina. Associated dyspareunia and dysuria also

Examination

- Vaginal and vulvar erythema and oedema
- Strawberry cervix

Investigations

- High vaginal swab for PCR/ MCS- numerous polymorphs, absent lactobacilli and flagellated Trichomonads
- Endo cervical swab or SOLVS for Chlamydia and Gonorrhoea
- STI screen
- Treatment
- 1 Metronidazole/tinidazole 2 gm stat orally.(alternative- metronidazole 400mg BD x 5 days)
- No alcohol during and for 24 hours after metronidazole or tinidazole
- No sex for 7 days after treatment
- PARTNER SHOULD BE TREATED SIMULTANEOUSLY
- Notifiable in NT
- Contact tracing done
- Retest in 4 weeks if patient remains symptomatic

TRICHOMONIASIS

BACTERIAL VAGINOSIS

Organism

- Gardnerella vaginosis, bacteroides and mixed anaerobic flora like Mobiluncus and genital mycoplasmas replacing the normal healthy bacteria like lactobacilli
- Most commonly associated with frequent sexual activity or use of vaginal douches. Now proved it can be sexually transmitted
- Most common cause of infective vaginitis
- Discharge- greyish white watery, profuse, bubbly with fishy smell
- No obvious vulvitis/vagiinitis

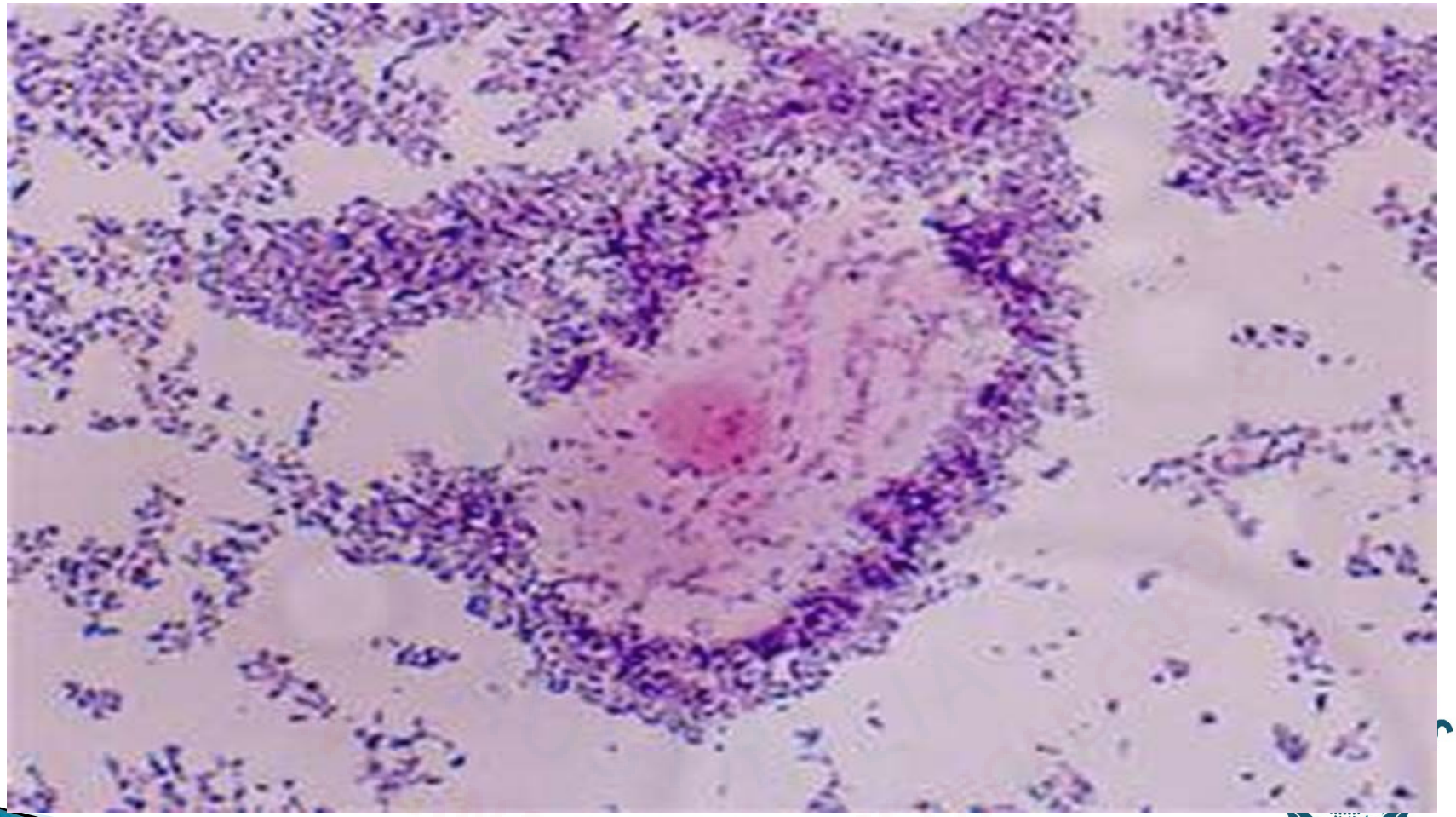
Investigations

- High vaginal swab for MCS and Gram stain- Smear shows clue cells
- Amine whiff test
- Vaginal fluid pH- > 4.5

Diagnosis based on Amsel method- if 3or more of the following 4 criteria are present

- 1 a characteristic homogenous whitish fishy adherent discharge
- 2 clue cells on microscopy
- 3 vaginal pH >4.5
- 4 amine test positive
- OR

BACTERIAL VAGINOSIS



BV

Nugent method- current gold standard- based on microscopic score of vaginal bacteria

This method scores

- the loss of lactobacilli
- increasing numbers of Gram variable and Gram negative coccobacilli
- Increasing numbers of Mobiluncus

Score of

0- 3 is normal flora

4-6 is intermediate

7 - 10 is BV

BV

TREATMENT

- Oral Metronidazole for 7 days or
- Vaginal clindamycin 1gram at night for 7 nights or
- Vaginal metronidazole for 5 nights
- Treat partner simultaneously

Recurrent BV

3 or more episodes within 12 month period

Treatment

- Treat current episode
- Treat partner simultaneously

- Then
- Intravaginal metronidazole weekly for 4 months

Tampon shock syndrome

Organism

Staphylococcus

Symptoms

- Offensive vaginal discharge, fever, muscle aches, nausea, vomiting
- Can progress to confusion, stupor and coma

Treatment

- Remove tampon
- Take cultures from vagina, cervix and perineum
- Clean vagina with povidone iodine for 2 days
- Start antibiotics like flucloxacillin/vancomycin
- If signs of shock, refer to hospital
- Advice regarding hygiene

LICHEN SCLEROSUS

- Autoimmune disorder
- Presents with intense itching of vulva
- Discharge is absent

O/E

- White, shiny wrinkled plaques in lace like pattern over vulva and peri vaginal areas. Can extend to anal area in a figure of 8 pattern
- Vagina spared
- Can cause scarring and adhesions in the genitalia
- 4% chance of developing squamous cell Ca

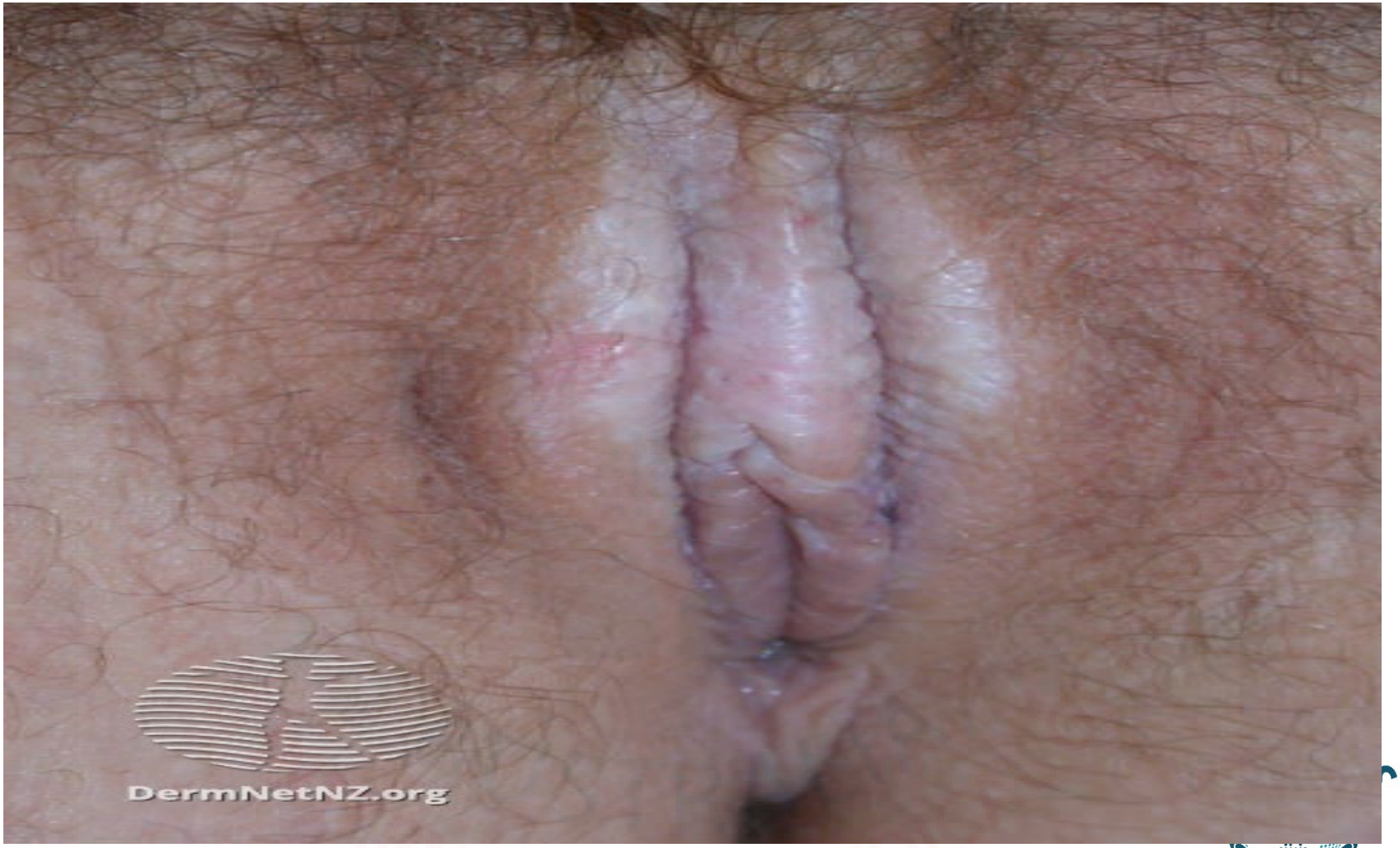
Investigation

Multiple punch biopsy from lesion

TREATMENT

- Local steroid application- clobetasol twice daily for 1-2 weeks, then once daily for 1-2 months
- Maintenance with betamethasone1 or 2 applications/week lifelong
- If not responding, retinoids /photo therapy/ LASER
- Surgery if scarring, cancer
- Patient requires life long follow up with 6 monthly checks initially and then annually

LICHEN SCLEROSUS



BARTHOLIN'S CYSTS

- 2 pea sized glands located at the posterior region of vaginal opening whose ducts open at 4 and 8'oclock positions of vaginal vestibule
- Bartholin's cyst-painless vulval swelling with fluctuation. Could be left alone or advice Sitz baths or aspiration if increased size

- Bartholin's abscess
- Pus collection. Presents with fever and severe pain with tense fluctuant swelling. Treated with incision and drainage and insertion of Word catheter, antibiotics and analgesics, Sitz baths
- If recurrent treated with marsupialisation

WORD CATHETER

NATIONAL CERVICAL CANCER SCREEN

- No PAP smear from December 1st 2017

HPV

- > 99% of cervical cancer linked to oncogenic HPV
- 14 oncogenic HPV types, out of which Types 16 and 18 carries highest risk of cervical cancer
- Transmission via genital skin to skin contact, or through any type of sexual intercourse
- Majority of HPV remains asymptomatic and is cleared by body in 1 -2 years time

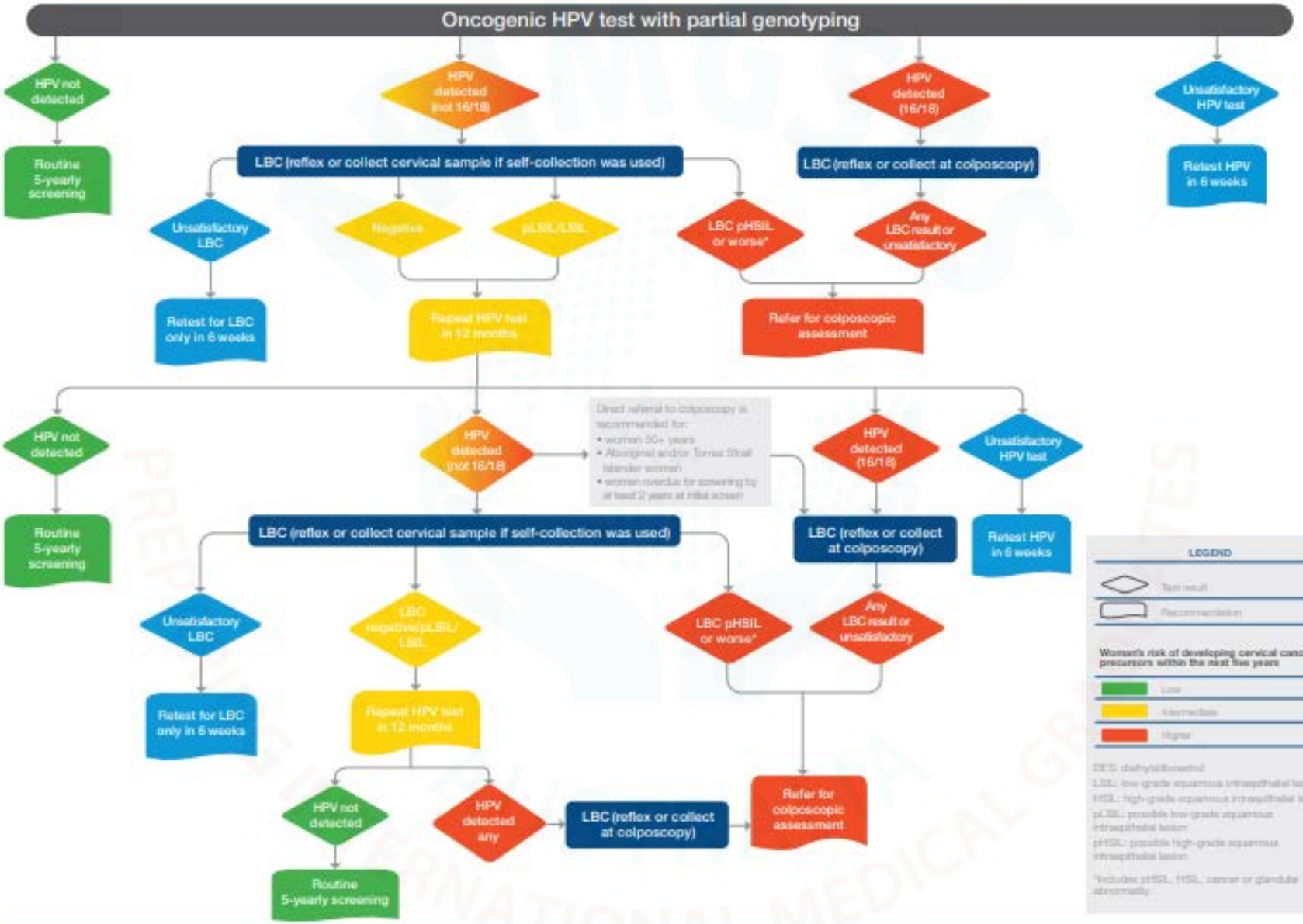
NCCSP

- All women who had been or is sexually active has to undergo NCCS

- Starts from 25 years or 2 years after last PAP smear if PAP has been done after 25 years and has to be done every 5 years if results are normal

- If PAP smear was done before 23 years, start HPV screen by 25 years and not in 2 years time

CERVICAL SCREENING PATHWAY (CLINICIAN COLLECTED OR SELF-COLLECTED)



Suggested citation: Cancer Council Australia Cervical Cancer Screening Working Party. Clinical pathway: Cervical screening pathway. National Cervical Screening Program Guidelines for the management of screen-detected abnormalities, screening in specific populations and investigation of abnormal vaginal bleeding. CCA 2016. Accessible from http://wiki.cancer.org.au/australia/Guidelines/Cervical_cancer/Screening. Updated Dec 2020.

NATIONAL CERVICAL SCREENING PROGRAM

Australian Government Department of Health

Cancer Council

NCCSP

LAB REPORTS

- Low risk
- Oncogenic HPV negative
- Intermediate risk
- Oncogenic HPV detected but not 16/ 18, LSIL, pLSIL
- High risk
- HPV 16/18 present, HSIL, pHSIL, glandular abnormalities

Co-test

- HPV screen + Reflex LBC

NCCSP

LSIL(formerly CIN1 or mild squamous dysplasia) treatment

- Colposcopically proven LSIL requires no treatment as majority clears by itself but a co-test needs to be done every year till it clears

NCCSP

HSIL(formerly CIN 2/3 or moderate/severe dysplasia) treatment

- Ablation by
- LASER
- Cryotherapy
- Cold coagulation

OR

- Excision by
- Cone biopsy
- LLETZ/ LEEP

Follow up

- By HPV tests every year till 2 negative consecutive samples are obtained and thereafter 5 yearly screening

HSIL

Ablative therapy should be reserved for women intending to have children and when the following conditions have been met:

- TZ is completely visible
- There is no evidence of invasive or glandular disease
- A biopsy has been performed prior to treatment
- HSIL has been histologically confirmed

Laser Surgery

- Laser surgery is just as effective as LLETZ and may be a better option if the precancerous cells extend into the wall of the vagina or if the lesion on the cervix is very large

HSIL

Large loop excision of the transformation zone (LLETZ)

- Also called loop electrosurgical excision procedure (LEEP), this is the most common way of removing cervical tissue for examination and treating precancerous changes of the cervix

Cone biopsy

- This procedure is similar to LLETZ and is used when there are abnormal glandular cells in the cervix or when early-stage cancer is suspected.

NCCSP

- All glandular abnormalities including atypical endocervical/ glandular cells of undetermined significance should be referred for colposcopy
- Treatment is by excision
- Follow up is with annual co testing indefinitely
- Any abnormal result, refer for colposcopy

SELF COLLECTION

Eligibility

- From 1st July 2022, self collection option is available as part of the NCSP to all people with a cervix who are aged between 25 -74 years and who have ever been sexually active

- Apart from people who are asymptomatic coming for routine testing, self collection can also be offered to
- At the intermediate risk pathway at 12 and 24 month testing
- After total abdominal hysterectomy, provided it was for benign reasons with no evidence of cervical pathology
- Also offered to pregnant women, LGBTQI+ people, people who have experienced sexual violence, people living with disability

SELF COLLECTION

Self collection not a choice for

- with symptoms suggestive of cervical cancer
- who is undergoing test of cure after treatment for HSIL
- who has been treated for glandular abnormality
- who has DES exposure in utero
- who had total hysterectomy with history of HSIL

as they need a co test

SCREENING IN PREGNANCY

A woman can be safely screened any time during pregnancy but endo cervical brush should not be used

Positive oncogenic HPV(not 16/18) with LBC negative or pLSIL/LSIL

- Repeat HPV test in 12 months

Positive oncogenic HPV (not 16/18) with LBC pHSIL/ HSIL or any glandular abnormality

- Refer for colposcopy
- Once confirmed to be HSIL, defer treatment until after delivery
- Post partum follow up assessment by colposcopy or/HPV test should be done no less than 6 weeks and preferably at 3 months
- Vaginal oestrogen as cream / pessary prior to colposcopy in breast feeding women increases quality of cervical sample for LBC but cease 3 days prior to testing

Positive HPV(16/18) whatever LBC result

- Refer for colposcopy

Cervical biopsy is unnecessary unless invasive disease is suspected on colposcopy or RLBC predicts invasive disease

HPV VACCINE

- Also called Gardasil 9
- Protection against 6, 11, 16, 18, 31, 33, 45, 52 and 58
- Nonavalent vaccine given I/M as one dose, from Feb 6th 2023, according to WHO guidelines for both boys and girls, included under school immunisation schedule and is given to children at 12 to 13 years of age
- Single dose till 25 years
- From 26 years and if immunocompromised whatever be the age, 3 doses should be given at 0, 2 and 6 months apart
- Recommended age- 9 to 25 years

- Contraindications
- Anaphylaxis to previous dose
- Anaphylaxis to yeast
- Pregnancy

HPV VACCINE

- In women it protects against cervical, vaginal, anal cancers, precancerous lesions of cervix, vaginal and anal areas and genital warts
- In men it protects against precancerous lesions in anus and anal cancers and genital warts

HPV VACCINE

- Vaccine is most effective before first sexual intercourse
- HPV testing before vaccine is not recommended
- Vaccine is not the treatment for current HPV infection genital warts or precancerous conditions
- Not all cancer causing types are covered by vaccine
- Vaccine will not cause HPV
- Pregnant women should not be vaccinated

CERVARIX

- Another HPV vaccine
- Protects against HPV 16 and 18
- Age group- in females 10- <46 years
- Single I/M injection

FEMALE INFERTILITY

Definition

- Inability of a couple to conceive after12 month period of unprotected sexual intercourse

Types

- **Primary infertility**

  when couples have never conceived at all

- **Secondary infertility**

  those who have conceived in the past and now has difficulty to conceive

FEMALE INFERTILITY

Causes

Ovulation disorders

- PCOS
- Hypothalamic dysfunction as in excess physical or emotional stress, recent substantial weight gain or loss, high BMI, eating disorders
- Pituitary dysfunction as in hyperprolactinemia
- Primary ovarian insufficiency

Tubal infertility

- PID due to STI's
- Pelvic surgeries
- Pelvic TB- uncommon

FEMALE INFERTILITY

Uterine or cervical causes

- Endometriosis
- Fibroids
- Polyps
- Congenital uterine abnormalities
- Cervical stenosis due to congenital malformations or surgeries
- Cervical mucous abnormalities

Medical causes

- Thyroid dysfunctions
- Uncontrolled DM
- Autoimmune diseases like SLE

FEMALE INFERTILITY

Medications

- Antiepileptics
- Antipsychotics
- Chemotherapeutic agents

Illicit drugs

- Marijuana
- Cocaine

Infrequent sexual intercourse
Advanced maternal age
Unexplained
Family history

FEMALE INFERTILITY

- Investigations need to be done in both partners together when appropriate
- If below 35 years, investigations has to be ordered only after 12 months of unprotected intercourse
- If woman is above 35 years and unable to conceive after 6 months of unprotected intercourse, investigations need to be done
- During this time period, advice regarding frequency of intercourse and fertility period
- For pregnancy, frequency of intercourse should be around 2-3 times/ week

FEMALE INFERTILITY

Detection of ovulation time is by

- Ovulation predictor kits that detects surge in LH. Testing should be done from 11 day of your cycle
- Basal body temperature method
- Billing's ovulation method

FEMALE INFERTILITY

Investigations

Basic blood tests

- FBE ESR/CRP, UC&E, FBS, LFT, STI screen

Hormonal tests

- TFT, S. prolactin, FSH, LH, free androgen index

Tests to confirm ovulation

- Mid luteal progesterone assessment
  Estimation of the level of progesterone 7 days before expected period
  >17 nmol/L is strongly suggestive of ovulation
- Pelvic U/S or endometrial biopsies
  Second line in detecting ovulation

Tests for tubal patency

Hysterosalpingogram (HSG)
Hysterosalpingo-contrast sonography (HyCoSy)
Lap and dye test with hysteroscopy

FEMALE INFERTILITY

Ovarian reserve testing

To predict ovarian response to assisted reproductive treatment (ART)

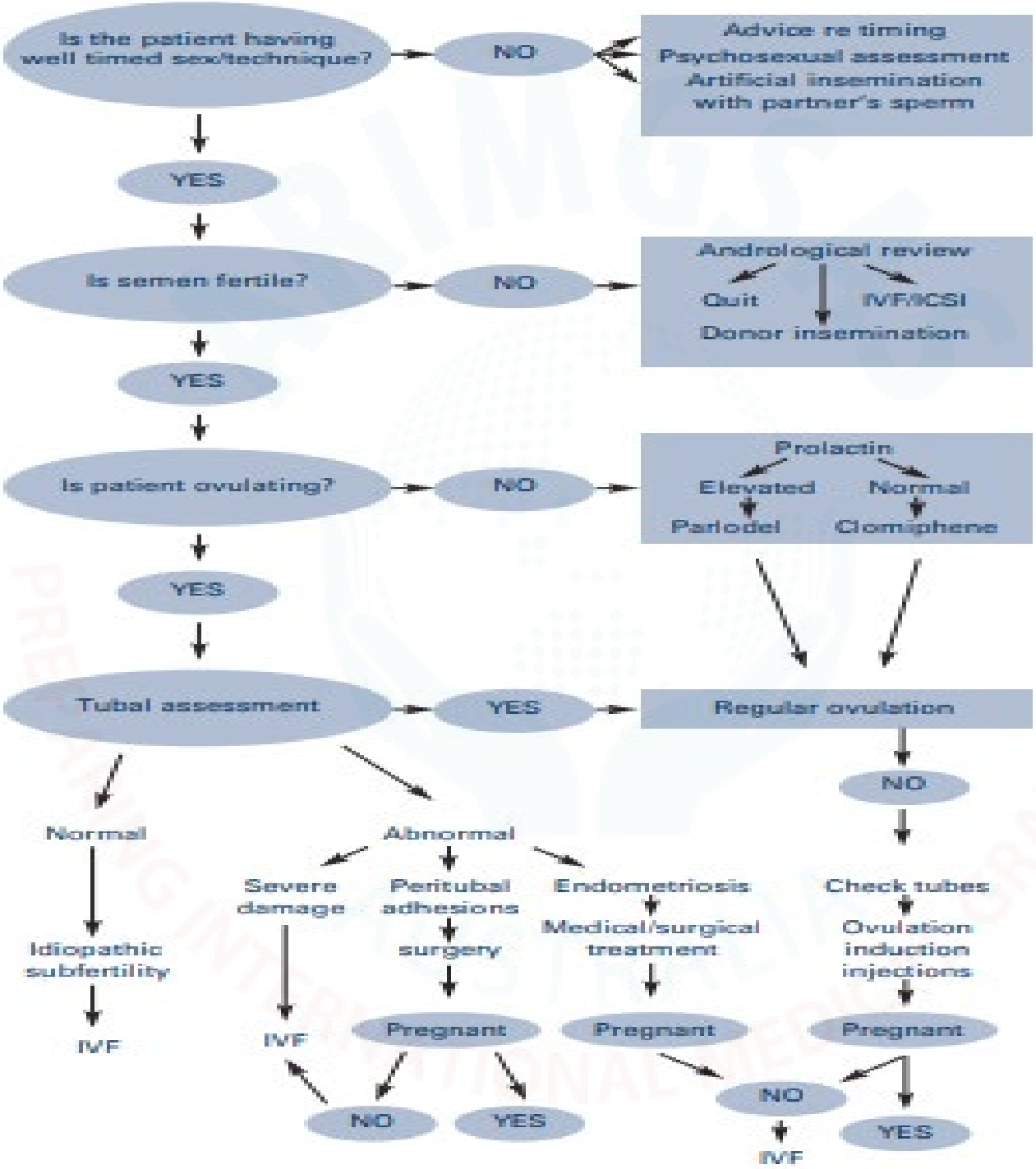
Not indicated to predict conception

Done by

- **Day 2-4 FSH and E2 (oestradiol)**
  FSH >10 IU/L and elevated E2 denotes poor ovarian response

- **Anti -Mullerian hormone (AMH)**
  Low AMH predictive of poor ovarian response

- **Assessment of antral follicle count (AFC)**
  By trans vaginal U/S
  < 3-7 predicts poor ovarian response


Is the patient having well timed sex/technique?
NO
Advice re timing
Psychosexual assessment
Artificial insemination with partner's sperm
YES
Is semen fertile?
NO
Andrological review
Quit
IVF/ICSI
Donor insemination
YES
Is patient ovulating?
NO
Prolactin
Elevated
Normal
Parlodel
Clomiphene
YES
Tubal assessment
YES
Regular ovulation
NO
Normal
Abnormal
Severe damage
Peritubal adhesions
Endometriosis
Check tubes
Idiopathic subfertility
surgery
Medical/surgical treatment
Ovulation induction injections
IVF
IVF
Pregnant
Pregnant
Pregnant
NO
YES
NO
YES
IVF

MCQ 1

- 16year old girl, living with her boyfriend comes to your GP requesting for combined oral contraceptive pills. She came to know about these pills through internet
- What will be your approach
- A Give her the pills
- B Advice her to bring her parents
- C Inform child protection services
- D Decline her request

MCQ 2

- 37 years old Lisa is at your GP clinic concerned about her loss of periods since 1 year. She had a vaginal delivery last year following which she had post partum haemorrhage due to retained cotyledon and lost 900 ml of blood. She was treated with D&C at that time
- What could be the reason for amenorrhoea
- A Pituitary necrosis
- B Intrauterine adhesions
- C Premature menopause
- D Primary ovarian insufficiency

MCQ 3

- 27 years old lady comes to your GP for contraceptive advice. She has recently tested Factor V Leiden positive Which contraception can she have
- A POP
- B Mirena
- C COC with 50 mcg of EE
- D Depo MPA
- E Copper IUD

MCQ 4

- 65 years old Jenny has come to the GP with vulvar erythema and vaginal pain and oedema
- She has whitish cheesy discharge and candidiasis has been confirmed by lab culture
- How will you treat her
- A Topical nystatin
- B Oral fluconazole
- C HRT
- D Topical oestrogen
- E Oral ketoconazole

MCQ 5

- 42 years old Samantha presents to your GP with the fourth episode of candidiasis since this year proved by cultures What treatment can you offer her
- A Topical miconazole
- B Topical nystatin
- C Oral fluconazole
- D Topical clotrimazole

MCQ 6

- 37years old woman coming to your GP with heavy menstrual bleed since last 6 months
- Physical examination showed no abnormality
- Her routine blood tests showed mild anaemia
- A trans vaginal ultrasound came out normal
- What will you do next
- A Give her OCP
- B Start minipills
- C Insert Mirena
- D Give her Depo MPA

MCQ 7

- 28 years old Lisa comes to your GP for management of severe abdominal bloating during her premenstrual days interfering with her quality of life
- What will be your definitive management
- A Start her on danazol
- B Advice her a healthy life style
- C Give her COCP
- D Put her on POP
- E Give her pyridoxine

MCQ 8

- 37 years old Melinda is at your GP complaining of heavy menstruation. She had a tubal ligation done 2 years back as she did not want any future pregnancies
- What will be your management
- A COC
- B Mirena
- C NSAIDS
- D Tranexamic acid
- E MHT

MCQ 9

- 30 years old Jane comes to you for contraceptive advice She has epilepsy and is on phenytoin. She wishes to have a pregnancy within next 1 year
- Which contraceptive is best for her
- A Implanon
- B Depo MPA
- C Mirena
- D POP
- E COC WITH 20 mcg of EE

MCQ 10

- Jane, 65 years is being assessed for osteoporosis. DEXA revealed T scores of -2.5 and -2.7 for femoral neck and vertebral column respectively. She was diagnosed with breast cancer 6 years ago for which she underwent mastectomy, chemo and radiotherapy. In addition of putting her calcium and vitamin D, which medication is the best option for her
- A Raloxifene
- B Alendronate
- C Teriparatide
- D Strontium ranelate
- E HRT

MCQ 11

- A 28 year old woman books at the antenatal clinic at 13 weeks of gestation. She had CST done 1 week prior which showed HSIL (CIN 3)
- Which one of the following is the next step in management
- ATermination of pregnancy
- B Refer for colposcopy
- C Refer for colposcopy and cone excision
- D Refer for colposcopy and LLETZ
- E Refer for colposcopy and biopsy

MCQ 12

- A 19 year old woman, prescribed a triphasic OCP for the first time 1 month ago, complains of frequent spotting. Which is most appropriate management
- A Increase dose of oestrogen
- B Increase dose of progestogen
- C Advice alternate contraception
- D Continue contraception and review in 2 months
- E Change to biphasic pill

MCQ 13

- Mary, 35 years is in your GP for consultation
- She is worried about her periods which heavy and prolonged but regular. She has been assessed with blood tests and transvaginal U/S with normal results. She is married and has no plans to start a family not at least in another1 year. Which one of the following is the most appropriate treatment option for her
- A POP
- B COCP
- C Mirena
- D Implanon
- E NSAID's

MCQ 14

- A 25 year old woman presents to your GP as an emergency appointment, 9 hours following unprotected sexual intercourse. She requests emergency contraception to prevent pregnancy. She has asthma and is on salbutamol inhalation as required. Routine examination is unremarkable with stable vitals. Her BMI is 22. Blood investigations reveal no hepatic or renal dysfunction
- Which emergency contraception is the best choice for her
- A LNG pill
- B Copper IUD
- C Methotrexate
- D Ethinyl estradiol
- E Ulipristal acetate

MCQ 15

- A 34 year old lady presents to your clinic with 6 months of amenorrhoea after her third vaginal delivery. She has 2 children previously, vaginally delivered and breast fed exclusively
- During her third delivery, she had retained placenta and heavy bleed following which she had manual removal of placenta and D & C
- Now she is not getting enough milk to feed the baby
- The most likely cause of her present situation is
- A Pituitary necrosis
- B Pituitary tumour
- C Asherman's syndrome
- D Primary Ovarian insufficiency
- E Hypogonadism

MCQ 16

- A 32 year old woman comes to your office to discuss about her recent CST result with you. The result shows she has LSIL. Her old PAP done 2 years ago was normal
- Which one of the following would be the most appropriate action to take
- A Repeat co-test in one year
- B Refer for colposcopy
- C Refer to oncologist
- D Repeat CST in 6 months
- E Repeat CST in 2 years

MCQ 17

- A 32 year old lady, presents to your GP with 3 day history of pain during sex and associated lower abdominal pain. She has no other symptoms. She recently has changed her sexual partner and uses Copper IUD for contraception. She had a clear CST 6 months ago. She has no other medical or surgical conditions and takes no regular medications. On examination she appears well. Her PR is 98/mt, BP 118/7-, RR 18/mt, SpO2 98% in room air and temperature 37.2. There is lower abdominal and cervical tenderness and cervicitis is seen on speculum examination

  A urine pregnancy test is negative
- Which one of the following is the most appropriate next step in management
- A Give amoxicillin-clavulanate and review in 1 week
- B Remove Copper IUD
- C Arrange diagnostic laparoscopy
- D Give ceftriaxone, doxycycline and metronidazole with review in 48 hours
- E Do pelvic ultrasound

MCQ 18

- A 24 year old woman , who has not conceived after 2 years of unprotected intercourse, presents because she has a friend who was recently diagnosed with endometriosis
- Which one of the following symptom profile is more likely if endometriosis is present in this woman
- A Dysmenorrhea from time of menarche
- B Dyspareunia
- C Menorrhagia
- D Mid cycle bleeding
- E No abnormal bleeding or pain

MCQ 19

- 57 year old postmenopausal woman presents to GP with 3 month history of intermittent vaginal bleeding. She has no other genitourinary symptoms. Her medical history includes a left mastectomy for invasive ductal cancer 8 years ago and Type 2 DM. Her current medications are tamoxifen and metformin. There is no family history of malignancy. On examination, she appears well with normal vital signs. Her BMI is 34 kg/m2. Abdominal and pelvic examinations are normal. The self collected CST done 14 months ago was negative for HPV.
- Which one of the following is the next step in GP's management of this patient
- A Endometrial biopsy
- B Dilatation and curettage
- C Cervical co test
- D CT abdomen
- E MRI pelvis

MCQ 20

- An otherwise well 35 year old woman presents to ED with left upper quadrant pain after falling over and striking her upper abdomen against a chair. On examination her BP is 120/80 and pulse 90/mt. She has some bruising under her rib cage, but no other abnormal physical findings. A CT of abdomen and pelvis is normal except for a 5.5 cm right sided ovarian cyst. It is thin walled and there are no septations. On taking history, she has no menstrual abnormalities and uses COCP. With regards to the CT findings, which one of the following is most appropriate
- A Ultrasound follow up
- B Serum Ca 125
- C Percutaneous aspiration of cyst
- D Laparoscopic cyst removal
- E Reassurance

MCQ 21

- A 32 year old woman had a cervical screening test 12 months ago that showed HPV not 16/18 positivity with LSIL. She was advised to return for repeat testing in 12months. Now, at follow-up, her HPV test again shows non-HPV 16/18 with no cytological abnormalities. What is the most appropriate next step in her management
- A Resume 5-yearly cervical screening
- B Refer for colposcopy
- C Repeat HPV testing in 12months
- D Perform cone biopsy
- E Test for HPV 16/18 subtypes by PCR

ANSWERS

- 1A
- 2 B
- 3 E
- 4 A
- 5 C
- 6 C
- 7 C
- 8 A
- 9 C
- 10 B
- 11B
- 12 D
- 13 C
- 14 B
- 15 A
- 16 A
- 17 D
- 18 B
- 19 C
- 20 A
- 21 C

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