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| **Near patient testing:** |

***General screening tests:***

|  |  |  |  |
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| **Condition:** | **Test** | **Positive if:** | **Negative if:** |
| **Pregnancy test** | Gravindex | No clumping | Flocculation |
| **Syphilis** | RPR  | Flocculation | No clumping |
| **Rhesus** | Rapid Rh | Flocculation | No clumping |
| **Anaemia** | CuSO4 | Drop sinks ≈ ≥ 10g/dl | Drop floats ≈ < 10g/dl |
| **Fetal lung maturity** | Tap-test | Few bubbles | > 5 bubbles |
| **Gardnerella vaginalis** | Whiff test (K-OH) | Fishy odour | No odour |
| **Candida albicans** | K-OH wet mount | Hyphae (microscopy) | No hyphae (microscopy) |
| **Trichomonas vaginalis** | NaCl wet mount | Mobile pear-shaped protozoa | No visible organisms |
| **Cervical cancer** | Acetic acid test | White lesion | No whitening |

***What diseases are screened for?***

* Identifiable
* High prevalence in target population
* Long latent period
* Natural history must be known/understood
* Acceptable/effective treatment available
* Screening test must be suitable/acceptable
* Cost effective
* Adequate resources for treatment & F/U

***Characteristics of a good screening test:***

* Safe
* Acceptable
* Simple to perform
* Low cost
* Repeatable results
* Sensitive (probability of positive result in a diseased patient)
* Specific (probability of negative result in a non-diseased patient)
* High predictive value (probability of having the disease if you test positive)

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| **Screening for breast cancer (BRCA):** |

***Risk factors for developing BRCA:***

* Personal or family history of BRCA (1st degree relative)
* Personal of family history of other adenocarcinomas:
	+ Colon
	+ Ovary
	+ Endometrium
* Advanced age
* High socio-economic status/developed world → obesity
* Previous atypical epithelial hyperplasia
* Early menarche; late menopause
* Sub-fertility
* Not lactating (breastfeeding)

***Screening techniques:***

* Self-screening of patient
* Mammography (economic considerations)
* FNA (practical considerations – needs skill)

***Management of breast lumps*** – stepwise approach:

* Clinical palpation → mammography (± augmentation by US) → FNA → biopsy

***Good clinical practice:***

* Public education → awareness
* Teaching self-examination
* Mammography for high-risk women
* R/F for assessment should a lump be detected

**Note: Screening for gynaecological CA (see pelvic masses below)**

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| **Early pregnancy loss:** |

***Definition***: Loss before 24wk gestation:

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| **Ectopic pregnancy (EP):** |

***Possible implantation sites:***

* Tubal
* Ligamentous (broad ligament)
* Ovarian (ovarian cortex) → can bleed profusely!!
* Abdominal (usually progressed past 20wk) → massive bleed due to blood supply from liver, peritoneum etc.
* Cervical → massive haemorrhage

***Ax:***

* Embryonal factors:
	+ Chromosomal & structural abnormalities → poor implantation
* Maternal factors:
	+ Previous salpingitis (ASO or “PID”)
	+ Endometriosis
	+ Tubal surgery
	+ Congenital abnormalities e.g. blind-ending tubal mucosa
	+ Assisted reproduction e.g. IFV & GIFT
	+ IUCD

***Sx:***

* Incidentally – during US
* Amenorrhoea
* Pain (iliac fossa)!! – due to parietal peritoneum stretching
* Adnexal mass
* PVB (if pregnancy aborts; also associated with ↑↑ pain in one iliac fossa)
* Extra-uterine pregnancy
* Ruptured ectopic (PAIN!!!)

***Definitions:***

|  |  |
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| **Acute EP** | **Symptoms:*** Severe LAP (sudden; colicky/constant)
* N&V; dizziness
* Shoulder-tip pain (due to intra-peritoneal irritation of diaphragm)
* Amenorrhoea for some time & NOW ± PVB

**Signs (examination):*** Shock
* Pallor
* Distended abdomen – blood (± tenderness; ± rebound tenderness)
* Peritonitis if not distended
* Cervical excitation tenderness (CET)
 |
| **Chronic EP** | **Symptoms:*** LAP (localized to 1 iliac fossa) → ↑ in severity over tie
* Adnexal mass
* Positive pregnancy test &/or amenorrhoea

**Signs (examination):*** Generally well (NO SHOCK; NO PALLOR; NO PERITONISM)
* Localized rebound tenderness over iliac fossa
* Tender unilateral adnexal mass on bimanual PV
 |
| **Acute on Chronic** | **Symptoms:*** Mild LAP → WORSE!!! – along with amenorrhoea

**Signs (examination):*** Shocked + tender abdomen + pallor + adnexal mass felt (bimanual PV)
 |

***Differential Dx:***

* **Gynaecological**: Spontaneous abortion (see below); ASO; ruptured corpus luteum cyst; ovarian torsion
* **Surgical**: Appendicitis; mesenteric adenitis; ruptured spleen; perforated bowel
* **Medical**: Acute pyelonephritis; porphyria

***Dx:***

* Bloods: Hb; HcT; ABO & Rh
* Pregnancy test
* Paracentesis (transabdominal fluid aspiration – blood)
* Culdocentesis (transvaginal fluid aspiration via pouch of Douglas – blood)
* US – abdominal &/or vaginal (not a sensitive examination → NEVER DELAY LAPAROTOMY IF SHOCKED!!)
* Laparoscopy – if diagnosis still uncertain
* Laparotomy – if patient is shocked
1. **Resuscitation – ABC’s:**
	1. **Large bore IV infusion of Ringer’s lactate**
2. **Urinary catheter**
3. **ABO/Rh cross-match (BUT DON”T DELAY LAPAROTOMY!!)**
4. **Get informed consent to operation & for possible salpingectomy**
5. **Operatively:**
	1. **If tube ruptured:**
		1. **Salpingectomy**
		2. **Inspect other ovary & fallopian tube**
		3. **Suctioning to remove blood products (don’t remove all blood as it’ll get reabsorbed and serve as iron reserve)**
		4. **Inspect abdomen:**
			* **Haemostasis**
			* **Adhesions esp. between liver & diaphragm (Fitz-Hugh-Curtis sybdrome)**
	2. **If unruptured:**
		1. **Try to preserve tube**
	3. **If diagnosis is made early (non-emergency) → laparoscopic removal**
6. **Post-operative information about future pregnancies:**
	1. **Explain procedure**
	2. **Explain how rest of reproductive organs look esp. other tube**
	3. **Discuss any evidence of previous pelvic infections e.g. adhesions**
	4. **Discuss prognosis for falling pregnant again**
	5. **Discuss risk of recurrence**
	6. **Discuss what she should do if she fell pregnant again:**
		1. **Report immediately to clinic for US (vaginal) at 6-8wk to confirm intra-uterine pregnancy**

***Mx:***

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| **Abortion:** |

***Classification:***

* **Definitive classification:**
	+ Spontaneous:
		- Sporadic – occurring at irregular intervals in relation to other pregnancies
		- Recurrent – 3 consecutive abortions before 20wk gestation
	+ Induced:
		- Therapeutic – TOP act
		- Unlawful – sttempt to determine if this was the case
* **Clinical classification:**
	+ Safe:
		- Uncomplicated incomplete abortion
		- No antibiotics are needed
		- Tetanus toxoid if the woman hasn’t been immunized before
		- Managed as outpatients:
			* MVA
			* Systemic analgesis
	+ Unsafe:
		- T˚ > 37.2˚C &/OR
		- Foul-smelling products of conception &/OR
		- Any other complication
		- Regarded as severe if:
			* Sx of peritonitis
			* Uterus size ≥ 16wk
			* Sx of MODS:
				+ **CNS**: Confusion; LOC
				+ **CVS**: Hypotension; ↑ HR; cold/clammy extremities; pulmonary oedema; hepatomegaly; arrhythmias; ECG
				+ **RS**: ↑ RR; cyanosis; ↓ saturation; blood-gas; CXR
				+ **Liver**: Jaundice; hypoglycaemia; ↑LFT; ↑LDH
				+ **Renal**: ↓ Urine output; UKE
				+ **Haematological**: Anaemia; petechiae; echhymoses; FBC; D-dimers; clottinf profile
				+ **Metabolic**: UKE
	+ Therapeutic: According to termination of pregnancy act

***Ax:***

* Early spontaneous abortion – 12-14wk:
	+ Idiopathic (most common cause)
	+ Sporadic chromosomal abnormalities
	+ Environmental factors e.g. drugs; toxins; smoking; Ix
	+ Ovary can’t maintain pregnancy
	+ Corpus luteum defect
	+ Poor placentation
	+ Uterine septum (if implantation occurs here – it is fibrous)
	+ Auto-immune
	+ Similar HLA status of partner → ↓ normal immune response to trophoblast (necessary for continuation of pregnancy)
* Late spontaneous abortion – 14-28wk (associated with recurrent losses → investigate further esp. if after 20wk):
	+ Uterus can’t hold pregnancy – Hx of quick, painless labour with ROM → live fetus
	+ Incompetent Cx
	+ Congenital abnormalities of uterus e.g. uterus didelphys
	+ Submucus myomata
	+ Poor placentation
	+ Ix:
		- Syphilis
		- Chlamydia
		- Mycoplasma
		- AFIS – Dx: Pus cells on smear from inter amnion-chorion space
		- CMV; rubella
		- Toxoplasmosis
	+ Medica; factors:
		- Hypothyroidism
		- DM

***Sx:***

* Threatened abortion: Light PVB ± backache ± abdominal pain
* Inevitable abortion: Increasing pain & PVB ± clots ± uterine tenderness; cervical tenderness
* Incomplete abortion: Passed products of conception (POC) → ↓ cramps; SGA uterus; Cx open; POC felt
* Complete abortion: ≥16-18wk gestation; whole fetus & placenta expelled
* Missed abortion: IUD without expulsion; patient may have only amenorrhoea and nothing else

***Differential Dx:***

* Threatened abortion: Anovulatory or implantation bleed; anembryonic pregnancy (“blighted”); early ectopic
* Inevitable: Incompetent cervical os (but here there is no pain & no/little bleeding)

***Mx:***

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| **Threatened:** | 1. **Pregnancy test & US (if positive)**
2. **If sac but no fetus AND ≥ 8wk gestation = “blighted ovum” → Rx: MVA**
3. **If Dx uncertain → repeat in 2wk**
4. **If empty uterus → suspect ectopic pregnancy**
5. **If no US available → expectorant approach (60% don’t abort)**
 |
| **Inevitable:** | 1. **Resuscitate patient if necessary**
2. **Oxyticin IV → control bleeding**
3. **If in 1st TM → Evac/MVA**
4. **If in 2nd TM → give oxytocin and await spontaneous abortion → evacuate retained products**
5. **If placenta is completely aborted (only after 16-18wk) → omit evacuation**
 |
| **Incomplete:** | 1. **Resuscitation**
2. **Oxytocin IV → control bleeding**
3. **As for inevitable abortion except if uterus size < 14wk → then perform evacuation despite gestation**
 |
| **Complete:** | 1. **Observe for haemorrhage**
2. **Usually a cause for abortion → SEEK!!**
3. **Note whether fetus is fresh or macerated**
4. **If fresh fetus → take blood from fetal heart or calve (put in tissue culture medium) → detect congenital abnormalities (chromosomal analysis)**
5. **If fetus normal → review Hx → look for incompetent Cx os OR AFIS**
6. **Examine placenta → smear/histology**
7. **If macerated → think syphilis; other congenital Ix; poor placentation**
 |
| **Missed:** | 1. **If size < 12wk → evacuate directly**
2. **If size ≥ 12wk → induce with Prostaglandins e.g. Misoprostal**
 |

***Other important investigations & considerations:***

1. **Hb (at admission & D/C)**
2. **Rh status → if negative give antiD-Ig 100μg IMI STAT**
3. **RPR, FTA, TPHA or VDRL**
4. **PAP smear if ≥ 30yr**
5. **If recurrent abortions, look for:**
	1. **Corpus luteum defects → measure s-progestorone levels at next ovulation**
	2. **Uterine septum – do hysterosalpingogram or hysteroscopy**
	3. **Collagen disease – measure platelet count; collagen screen; anti-cardiolipin antibody (ACA)**
	4. **Balanced translocations – chromosomal analysis of woman & partner**
6. **Emotional support & allow her to grieve – 5 steps:**
	1. **Shock**
	2. **Denial**
	3. **Anger**
	4. **Depression**
	5. **Acceptance**
7. **Contraceptive counseling**
8. **Plan for future pregnancies e.g.:**
	1. **If sporadic early abortion reassure her that the risk of recurrence is not increased**
	2. **Incompetent Cx → R/G McDonald suture should be considered**
	3. **If recurrent → Mx depends on Dx**

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| **Male & female infertility:** |

***Ax***:

* **Female infertility:**
	+ Tubal considerations:
		- Post-PID obstruction & adhesions
		- Cogenital abnormalities
	+ Pevic considerations:
		- Endometriosis
		- Adhesions
	+ Ovulatory considerations:
		- Anovulations
		- Hypothalamic or pituitary disorders
		- Hyperprolactinaemia
		- Ovarian diasease e.g. dysgenesis; tumor; failure
		- Systemic disease e.g. thyroid; liver; kidney; obesity
	+ Uterine considerations:
		- Congenital abnormalities
		- Intrauterine adhesions
	+ Cervical considerations:
		- Congenital abnormalities
		- Stenosis due to Ix or Ø
		- Hostile/deficient cervical mucus
* **Male infertility:**
	+ Endocrine considerations:
		- Hypothalamic or pituitary dysfunction
		- Hyperprolactinaemia
		- Exogenous androgen use
		- Thyroid or adrenal disease
	+ Anatomic considerations
		- Congenital absence of vas deferens
	+ Ejaculatory system
		- Vas deferens obstruction (post infection)
		- Absence duct cilia
	+ Spermatogenic considerations:
		- Chromosomal abnormalities
		- Previous orchitis
		- Congenital cryptorchidism
		- Testicular damage due to injury; irradiation; chemicals
1. **Exclusion criteria – the following patient DO NOT qualify for further assessment → terminate the interview; give explanation, advice & encouragement:**
	1. **Single persons**
	2. **Couples where 1 of the 2 refuses to be examined or participate in tests/investigations**
	3. **Couples with 2/more alive children (in their current family structure)**
	4. **Women older than 40**
	5. **Known HIV patients**
2. **Treat patients for any current disease(s) esp. PID before offering infertility testing**
3. **Initial tests – 3 options:**
	1. **Serological testing for syphilis (RPR; FTA; TPHA; VDRL) & HIV testing**
	2. **Sperm analysis**
	3. **Hysterosalpingogram (contrast evaluation of uterine/tube patency/obstruction)**
4. **Majority of patient – there is no treatment (no medical way to open tubes available)**
5. **± Reconstructive surgery (selection criteria very strict) – e.g. patients with terminal (fimbrial) occlusion of tube**
6. Encourage remainder → NO MORE TESTS (esp. for 2˚ infertility)
7. Prevention:
	1. Early Dx & Mx of PID & STD’s
	2. Treat syphilis properly
	3. Counseled HIV positive patients

***Mx:***

***Referral guidelines:***

* Referral to specialized units most helpful in 1˚ infertility
* Offer assistance for taxing tests & investigations, which the patients are facing
* Indications for referral:
	+ Suspected anovulation (IF tubes are patent)
	+ Anatomical abnormalities of gentitalia
	+ Deficient sperm analysis
	+ Endocrine diseases
	+ Treatable conditions e.g. myomata
	+ Tubal obstruction (minority of cases)
* Diagnostic tests:
	+ Laparoscopy
	+ Sophisticated US
	+ Cx mucus evaluation
	+ Immunologica tests
* Tearapeutic options:
	+ Ovulation induction
	+ Artificial insemination
	+ IVF
	+ GIFT
	+ ICSI

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| **Abnormal uterine bleeding, galactorrhoea & hirsutism** |

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| **Increased uterine bleeding:** |

***Definitions:***

* Abnormal uterine bleeding – menstruation ≥ 80ml; acyclical bleeding:
* Menorrhagia: Excessive cyclical bleeding
* Metrorrhagia: Acyclical bleeding
* Meno-metrorrhagia: Excessive acyclical bleeding

***Dx:***

* Hx of many pad use; clots
* “Bleeding calendar” or “menstrual calendar”
* Pool of blood in the bed upon waking

***Ax:***

* **Dysfunctional**
	+ Anovulatory – no dominant follicle growth & ovulation → thick endometrium remains proliferative since progesterone not produced → outgors its own blood supply & sheds → oligomenorrhoea
	+ Ovulatory – 2 mechanisms:
		- Corpus luteum retains function → produces progesterone (up to 6wk) → oligomeonorrhoea + severe bleeding + pain
		- Insufficient progesterone levels → short luteal phase → polymenorhhoea
* **Organic:**
	+ Uterus:
		- Endometrial hyperplasia – unopposed eostrogen stimulation
		- Endometrial CA – excessive continuous acyclical bleeding
		- Endometrial polyps – usually benign (intermenstrual bleeding)
		- Adenomyosis/myomata (excessive cyclical bleeding)
		- Submucus myomata (intermentstrual bleeding)
	+ Cervix:
		- Cervix CA – excessive continuous acyclical bleeding
		- Cervical polyps – usually benign (intermenstrual bleeding)
		- Cervicitis
		- Pedunculated prolapsing myomata (contimuous excessive acyclical bleeding)
	+ Fallopian tubes:
		- PID (excessive cyclical bleeding)
		- Ectopic pregnancy
	+ Ovarian:
		- Oestrogen producing tumors
		- Ovarian cysts
	+ Other:
		- Endometriosis (excessive cyclical bleeding)
		- Vulvar/vaginal tumors or lacerations
* **Non-genital causes:**
	+ Contraception e.g. IUCD
	+ Long acting progestogenic contraception
	+ Breakthrough bleeding on oral contraceptives
	+ Endocrine:
		- Hypothyroidism OR hyperthyroidism
		- Hyperprolactinaemia
	+ Medication – anticoagulant Rx
	+ Haematologic – bleeding disorders
* **Neighbourhood bleeding:**
	+ PR
	+ Haematuria or bladder bleeding

***Mx:***

1. **Detailed Hx & Ex**
2. **Pregnancy test; CuSO4 /Hb**
3. **Exclude organic pathology → US; endometrial biopsy; hysteroscopy**
	1. **If found → Rx accordingly (remember to Rx anaemia + pain)**
	2. **If not found, assume dysfunctional bleeding & continue to step 4.**
4. **Blood tests to confirm dysfunctional uterine bleeding:**
	1. **FBC**
	2. **TFT’s**
	3. **Prolactin levels**
5. **Rx for cessation of bleeding & restoration of normal menstrual cycle – 2 option:**
	1. **Hormonal – oral contraception (effective; simple; contraceptive; discontinued in 6-8mo for re-assessment):**
		1. **Regime for STRONG BLEEDI NG AT TIME OF CONSULTATION – 2 options::**
			* **Ovral 1 tab. q6hr x4d → stops bleeding on day 1 → wirthdrawal bleedin (less severe) om day 5/6 → start next packet of ovral in normal way → with each cycle the bleeding becomes lighter → discontinue Rx after 4months & reassess**
			* **Medroxy progesterone acetate 5mg bd x10d → stops withing 2-3d → withdrawal bleed after tablets are finishe (less severe) → repeat Rx q4wk after initial course to re-establish cycle**
		2. **Progestogen dominant monophasic pill – double dosage may be required for severe bleeding:**
			* **Nordette (150μg levo-norgestral)**
			* **Nordiol (250μg levo-neorgestral)**
			* **Ovral (500μg levo-norgestral)**
		3. **Newer preparations – less severe bleeding:**
			* **Femodene (75μg gestodene)**
			* **Minulette (75μg gestodene)**
	2. **Non-hormonal:**
		1. **Anti-fibrinolytic agent e.g. tranexamic acid (cyclocapron) 1g q6-8hr for 3-4d then ↓ dose**
			* **C/I – previous thrombosis**
		2. **NSAID esp. for excessive cyclical bleeding e.g. Na**
		3. **proxen**
	3. **Refer as for organic disorder if 1st line of Rx is not successful**
	4. **If medical management not successful → consider Ø if patient has completed family:**
		1. **Hysterectomy OR**
		2. **Destruction of endometrium by lazer/cautery**

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| **Decreased menstrual bleeding:** |

***Definitions:***

* 1˚ Amenorrhoea – absence of menstruation by age 16/older
* 2˚ Amenorrhoea – absence of menstruation for ≥ 6months in ♀ with previously normal menstruation
* Oligomenorrhoea – ↑ interval between menstrual periods ≥ 35d

***Ax:***

* 1˚ Amenorrhoea:
	+ Genetic:
		- 46XY karyotype; Testicular fiminatization (androgen insensitivity)
		- 46XY & 46XX gonadal dysgenesis
		- 45XO gonadal dysgenesis (± Turner’s stigmata)
	+ Development:
		- Mullerian dysgenesis (with absent unterus &/or vagina)
		- Imperforate hymen
		- Complete transverse vaginal septum
	+ Hypothalamic (rare) – Defects in production/transport of GnRH
* 2˚ Amenorrhoea:
	+ Prergnancy
	+ Ovarian:
		- Premature ovarian failure
		- Destruction due to infection/irradiation/surgery
	+ Pituitary:
		- Sheehan’s syndrome - ↓ pituitary blood supply after severe post-partum bleeding
		- Prolictinoma
	+ Hypothalamic:
		- Severe weight loss
		- Anorexia nervosa
		- Severe stress
		- Serious exercise
		- Obesity
	+ Systemic disorders:
		- Hypothyroidism OR hyperthyroidism
		- Asherman syndrome – endometrial fibrous occlusion
	+ If associated with hirutism:
		- Polycystic ovarian syndrome
		- Congenital (or late onset) adrenal hyperplasia – rare
			* Ovarian or adrenal tumors

Mx:

1. **1˚ Amenorrhoea – do karyotyping:**
	1. **Genetic Ax → counseling on Ax, fertility & oestrogen Rx**
	2. **46XY karyotype → remove intra-abdominal gonads (possess a CA risk)**
	3. **Imperforate hymen/transverse septum → Ø**
	4. **Mullerian agenesis → R/F for specialized Ø**
2. **2˚ Amenorrhoea:**
	1. **Pregnancy test → if negative → continue**
	2. **TFT’s & prolactin levels → if abnormal, treat accordingly (remember – hypothyroidism → hyperprolactinaemia)**
	3. **Do progestogen challenge test:**
		1. **Medroxyprogesterone 5mg bd x5d**
		2. **If she has withdrawal bleed, she is producing oestrogen**
			* **If she has no hirsutism/alactorrhoea → Dx = mild hypothalamic dysfunction → COC Rx**
			* **If she has hisutism → do LH → if ↑↑ → Dx = PCOS**
			* **If she has galactorrhoea → Dx = Prolactinoma**
		3. **If she has no withdrawal bleed → investigate further – see point (d):**
			* **Gonadal failure**
			* **Serious hypothalamic dysfunction**
			* **Asherman syndrome**
	4. **Do oestrogen stimulation test (with Premarin 50mg/d x 21d), followed by progestogen challenge test:**
		1. **If she bleeds → Dx = oestrogen deficiency (severe hypothalamic dysfunction/1 ovarian failure)**
			* **Do FSH/LH:**
				+ **If ↑ → Dx is primary ovarian failure (premature menopause)**
				+ **If ↓ → Dx is severe hypothalamic failure**

**Give pulsatile GnRH stimulation & test response (if fertility required)**

**If no response → Dx = pituitary problem**

**If response → Dx = hypothalamic problem**

**Give FSH/LH Rx & test response (if fertility required)**

**If response → Dx = pituitary problem**

**If no response → Dx = ovarian problem**

* + 1. **If she doesn’t bleed → search for outflow obstruction**
			- **Do US**
	1. **Treat cause:**
		1. **PCOS – cosmetics (hirsuitism); cyproterone (anit-androgen); COC; clomiphene (if fertility required)**
		2. **Prlolactinoma – withdraw drugs; address hypothyroidism; exclude prolactinoma (CT)**
		3. **Hypothyroidism/hyperthyroidism – Rx**
		4. **Primary ovarian failure – COC OR hysterectomy & oestrogen HRT**
		5. **Secondary ovarian failure:**
			+ **If fertility require - options:**
				- **FSH/LH Rx**
				- **hCG to mimic mid-cycle LH surge → induce ovulation**
				- **Clomiphene – blocks hypothalamic oestrogen receptors → stimulates GnRH & subsequent FSH/LH secretion**
				- **If clomiphene doesn’t work → pulsatile GnRH → stimulates LH/FSH**

***Note: Other causes of abnnormal PVB:***

* Post-coital bleeding → exclude Cx CA/CIN/cervicitis; cervical ectopy; ectropion
* Post-menopausal bleeding (see above)

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| **Glactorrhoea – approach:** |

***Mx:***

1. **Establish cause:**
	1. **Pituitary e.g. prolactinomas**
	2. **Endocrine e.g. hypothyroidism; stress induced hyperprolactinaemia**
	3. **Medications:**
		1. **Phenothiazines**
		2. **Metoclopramide**
		3. **α – methyldopa**
		4. **Oestrogens**
	4. **Nipple stimulation e.g. “runner’s nipples”**
	5. **Chest wall stimulation**
		1. **Thoracic surgery**
		2. **HZV**
2. **Sx of prolactinoma:**
	1. **Headache**
	2. **Visual disturbances**
	3. **Glactorrhoea**
3. **Rx – ALWAYS R/F:**
	1. **Bromocriptine initially**
	2. **Ø removal may be required later**

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| **Hirsutism – approach:** |

Exclude tumors of ovary; PCOS; CAH; adrenal gland tumors & Mx condition

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| **Pain, dysmenorrhoea & PMS** |

***Classification of pelvic pain:***

* **Pelvic pain syndromes:**
	+ Dysmenorrhoea
	+ Pelvic pain syndrome
	+ Ovulatory pain
	+ Dyspareunia
	+ PMS
* **Endometriosis**
* **Diseases of female internal genital organs**
	+ Cx of pregnancy
	+ Gynatresia
	+ Myomata
	+ Adenomyosis
	+ Uterine perforation
	+ PID
	+ Ovarian causes of pain
* **Diseases or syndromes of non-genital organs**
	+ GIT
	+ Urinary tract
	+ Vascular pain
	+ Orthopedic pain
	+ Extra-abdominal referred pain
* **Psychogenic pain**

***Anatomic considerations:***

* **Somatic pain:**

|  |  |  |
| --- | --- | --- |
| **Organ** | **Innervation** | **Spinal segment** |
| * Lower abdominal wall
* Anterior vulva
* Clitoris
* Urethra
 | * Ilio-inguinal
* Genito-femoral
 | L1 & L2 |
| * Posterior vulva
* Perineum
* Lower vagina
 | * Posterior femoral cutaneous nerve of the thigh
* Pudendal nerve
 | * S1­ – S3
* S2 – S4
 |

* **Visceral pain** – 2 types:
	+ Referred pain

|  |  |
| --- | --- |
| **Organ** | **Spinal segment** |
| Ovary | T10 |
| Fallopian tubes | T­11 & T12 |
| Uterus | T10-12  & L1 |
| Cervix | T11-12 & S2-4­ |

* + Splanchnic pain – diffusely localized pain transmitted directly from the organ:
		- Dysmenorrhoea
		- Labour pains
		- Distended viscus pain
	+ Various stimuli are responsible for visceral pain:
		- Hollow viscus distention e.g. unruptured ectopic pregnancy
		- Rapid stretching of solid organ e.g. haemorrhage into ovarian cyst
		- Chemical irritation of peritoneum e.g. ruptured ovarian teratoma
		- Tissue ischaemia e.g. torsion of ovarian tumor/cyst
		- Neuritis 2˚ to inflammation/neoplasia/fibrosis

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| **Pelvic pain syndromes:** |

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| **Dysmenorrhoea:** |

***Definition***: When there is physiological pain and discomfort @ menstruation → compromised lifestyle:

***Classifications, Sx & characteristics:***

* 1˚ Dysmenorrhoea – not associated with any palpable pelvic pathology:
	+ Ax: ↑ Prostaglandin production → ↑ myometrial activity
	+ Begins at ovulatory (not menses) onset (15-16yr) →mid 20’s
	+ NOTE: PAINFUL MENSES AT MENARCHE INDICATE OBSTRUCTIVE LESION
	+ Pain – mid-line; colicky; radiates to lower back/upper thighs; ± N&V; ± diarrhea; ± anxiety; ± headaches; ± syncope
	+ Begins few hours before menses until flow fully established
	+ Rarely lasts beyond 2nd day
* 2˚ Dysmonorrhoea:
	+ 2˚ to organic pathology:
		- PID
		- Endometriosis
		- Adenomyosis
		- Adhesions
	+ Occurs well before menses → later during full flow (longer than 1˚)

***Mx:***

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| **Primary dysmenorrhoea:** | 1. **Prostaglandin synthetase inhibitors e.g. NSAIDs (ibuprofen); mefanamic acid**
2. **If PGI’s don’t work → ovulation inhibition e.g. COC’s**
3. **If COC’s don’t work → investigate further for 2˚ Ax e.g.:**
	1. **Endometriosis**
	2. **Sub-mucus myomata**
	3. **Adenomyosis**
 |
| **Secondary dysmenorrhoea** | 1. **R/F for full assessment (± laparoscopy)**
2. **Rx is medical/surgical depending on Ax**
 |

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| **Chronic pelvic pain syndrome:** |

***Charcteristics:***

* Multi-parous in their mid-thirties presenting with lower abdominal pain
* Pain accentuated at time menses
* Associated with:
	+ Lower backache
	+ Dyspareunia
	+ Post-coital aching & discomfort
	+ Prolonged sitting or standing
* Decrease with lying down
* Other associations:
	+ Headache
	+ Abnormal uterine bleeding
	+ Non-offensive vaginal D/C
	+ A degree of sexual dysfunction

***Ax:***

* Dilated & congested pelvic veins
* Thought to be oestrogen dependant → dilate veins

***Sx:***

* Normal size uterus
* Retroverted
* Mild tenderness just above fornices

***Special investigations:***

* Pelvic US – look for dilated veins in the following areas:
	+ Uterus
	+ Broad ligament
	+ Around the ovary

***Mx*** – usually medical (unsatisfactory results):

1. **Rassurance**
2. **Symptomatic Rx e.g. analgesis**
3. **± Medroxy-progesterone acetate 30mg/d PO or as depot**
4. **Ø:**
	1. **Ventral suspension of uterus (usually unsuccessful)**
	2. **TAH & BSO – sometime the only cure**

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| **Ovulatory pain (“Mittelschmertz”):** |

***Definition***: Mid-cycle LAP:

***Associated with:***

* ± Malaise
* ± Nausea
* ± Abdominal tenderness

***Ax*** – 3 hypotheses:

* Follicle rupture
* Distension of ovarian capsule
* Small haemoperitoneum

***Mx***: Reassurance & sometimes ovulation suppression

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| **Dyspareunia:** |

***Definition***: Painful sexual intercourse:

***Classifications:***

* **Superficial** – if it occurs with attempted penetration:
	+ Usually psychogenic in nature – most often due to:
		- Hx of sexual problems
		- Hx of sexual abuse
		- Fear of pain it 1st coitus
		- Common in prostitutes (when they have a stable & loving relationship)
	+ Can be organic e.g. STD’s
* **Deep penetration** – if it occurs with deep penetration:
	+ Usually from organic lesions (see below)

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| **Organic lesions:** |

***Examples:***

* Thickened hymen
* Transverse vaginal septum
* Short, blind perineal pouch – due to Mullerian agenesis OR androgen insensitivity syndrome
* Inflammatory lesions e.g. vulvar/vaginal oedema or excoriation
* Bartholin’s abscess
* Cyst
* Endometriosis
* Acute/chronic salping-oophoritis
* Small mass in pouch of Douglas
* Post-operative scarring
* Anterior/posterior colporraphy
* Vulvar/vaginal atrophy (due to oestrogen deficiency)

***Mx***: Rx organic lesion AND demonstrate normal anatomy to patient (if the patient’s anatomy is normal) to reassure her

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| **Premenstrual syndrome (PMS):** |

***Definition***: Cyclical appearance of Sx in the pre-menstrual period (2nd half of cycle), with disappearance in the post-mentrual period for atleast 3 cycles:

***Ax:***

* 3 categories:
	+ Psychological
	+ Behavioural
	+ Somatic (physical)
* Common symptoms (fit into the fore-mentioned categories):
	+ Bloated
	+ Weight gain
	+ Headache
	+ Anxiety
	+ Tenderness & swelling of breasts
	+ Depression
	+ Irritability

***Note: Associations with the following have been made – but aren’t common to all patients with PMS:***

* Previous child abuse
* Marital disharmony
* Poor work performance
* Absenteeism
* Suicide & criminal acts

***Dx:***

* Detailed Hx & clinical assessment
* “Menstrual diary” kept by patient – record dates; symptoms; severity of Sx; weight gain
* “PM Cator” – patient decides on 3 most worrying Sx & records their frequency & severity daily
* To continue with diary/PM Cator throughout cycle & treatment phase to assess improvement

***Mx:***

1. **Conservative measures:**
	1. **Exclude organic pathology**
	2. **Counseling & reassurance if no organic pathology**
	3. **Diet manipulation or supplementation**
		1. **↓ Dairy products**
		2. **↓ Saturated fats & refined sugars**
		3. **↓ Caffeine – coffee; tea; cocoa; chocolate; cola**
		4. **Limit alcohol to 1 drink/day**
		5. **Supplementation – little evidence of benefit:**
			* **Evening of primrose oil OR**
			* **Vitamin E 2 tab. per day**
			* **MgCl2 1-2 tab. nocte**
	4. **Medical:**
		1. **Generalized Sx’s:**
			* **Dysfunctional bleeding: NSAIDs**
			* **Dysmenorrhoea: NSAIDs**
			* **Contraception: Progesterone dominant COC**
		2. **Specific Sx’s:**
			* **Breast pain:**
				+ **Bromocriptine 2.5mg/nocte from day 10 of cycle**
				+ **Metergoline 4mg tds from day 10 of cycle**
			* **Fluid retention: Spironolactone 25mg qid in 2nd ½ of cycle**
			* **Depression: SSRI’s OR TAD’s & psychiatric evaluation**/guidance

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| **Endometriosis:** |

***Definition***: Presence of endometrial tissue (glandular & stromal) at any other site outside the uterine cavity:

***Sx*** – classic triad of either:

* **Sever pelvic pain:**
	+ Gradual onset → with increasing severity
	+ Starts prior to onset of menstruation
	+ Due to congestion of pelvic organs (fixed)
	+ Continues throughout menstruation & ↑ due to peritoneal irritation
	+ Often felt sacrally or referred to rectum, perineum &/or lower limbs (esp. if retroverted – reason unknown)
	+ ↑↑ If associated with rupture of endometrioma
	+ Dyspareunia may indicate a retroverted uterus & adnexae
* **Dysmenorrhoea** (due to congested endometrial deposits) AND/OR Dyspareunia (due to adhesions → frozen pelvis):
* **Infertility** (due to tubal damage) – due to:
	+ Interference of tubal function due to deposits &/or adhesions (affect fimbrial pick-up mechanism)
* Other – depend on deposition site & presence of adhesions:
	+ Menometrorrhagia (advanced disease – due to ovarian adhesions → an/dysovulation)
	+ Constipation & diarrhea
	+ Haematuria (bladder involment)

***Ex:***

* Bluish nodules in vaginal fornices
* CET
* Retroverted uterus
* Tender, mobile semi-solid adnexal mass (“chocolate cyst”)
* Thickened/nodularity of recto-vaginal septum (on bimanual PV)

***Dx:***

* Patient in late 20’s/early 30’s
* Hx of dysmenorrhoea in ovulatory cycles (in adolescence); late child-bearing

***Special investigations:***

* Laparoscopy for visualization & biopsy

***Ax:***

* Retrograde menstruation
* Metaplasia of multipotenitial coelomic epithelium
* Haemotlogic/lymphatic spread of endometrial cells
* Auto-immune factors
* Familial factors (no proven link thus far)
* Racial factors (no proven link thus far)

***Pathology:***

* Brownish, purple nodule on peritoneum – associate with scarring or puckering (as result of old lesions)
* Can involve tubes; ovaries; omentum; pouch of Douglas; bowel (→ obstruction & IBS picture)
* Adhesions are common → frozen pelvis &/or eventual ovarian destruction → infertility (as well as ↓ ovum migration due to tubal damage)
* Repeated intra-ovarian haemorrhage → endometrioma – cyst with diameter of 15-20cm, filled with chocolate colored material (old blood)

***Mx*** – choice depends on future fertility; grade of severity on laparoscopy:

1. **Medical:**
	1. **Hormonal manipulation (suppression of ectopic endometrial tissue):**
		1. **COC OR**
		2. **Mild disease: Injectable progestogen (MPA)**
		3. **Moderate/severe:**
			* **Progesterone derivatives e.g. Gestrinone**
			* **α - methyl testosterone testosterone derivatives (Danazol)**
			* **GnRH Rx – can completely suppress menstruation (if given constantly) → ectopic endometriotic tissue atrophy – S/E hot flushes; osteoporosis**
2. **Sugical:**
	1. **Conservative:**
		1. **Adhesiolysis**
		2. **Endometrioma removal (ovarian cystectomy)**
		3. **Cautery of small endometriotic deposits**
	2. **Radical:**
		1. **TAH & BSO**

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| **Diseases of the internal genital organs, which present with pain:** |

***Complications of pregnancy:***

* Abortion
* Ectopic pregnancy

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| **Gynatresia**  |

***Cx:*** Can for haematocolpos, which → pain

***Ax:***

* Imperforate hymen
* Transverse vaginal septum
* Cervical atresia
* Non-communicating horn of abnormally developed uterus
* After cervical cautery/cone biopsy
* Atrophic stenosis (post-menopausal ♀) – associated with endocervical/endometrial malignancy OR radiotherapy for these malignancies
* Mx: Ø

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| **Myomata:** |

***Types***: Degeneration/torsion → pain OR red-degeneration (in pregnancy) due to congestion.

***Character:***

* Red-degeneration: Crampy ± associated peritoneal irritation
* Pedunculated: Acute colicky-like pain
* Submucus (aborting through Cx): Labour-like pains associated with meno-metrorrhagia
* Associated with peritoneal irritation

***Mx:***

* Laparotomy (to exclude appendicitis)
* If red myomata is found → leave it in-situ (removal could result in massive haemorrhage)
* Rx: Analgesia

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| **Adenomyosis:** |

***Definition***: Ectopic endometrial tissue within the myometrium (which is thickened & hypertrophied):

***Characteristics:***

* Patient usually 30-40’s
* Presents with 2˚ dysmenorrhoea associated with menorrhagia
* Uterus symmetrically enlarged & tender to palpation (esp. at menstruation)
* ± Feeling of pelvic heaviness &/or aching &/or dyspareunia
* Mx: Hysterectomy (diagnosis made retrospectively)

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| **Pelvic inflammatory disease (PID):** |

***Character:***

* Severe bilateral LAP

***Associated with:***

* Weakness
* Fever
* CET
* ± Adnexal masses
* WCC & ESR both ↑

***Note: PID is a differential for endometriosis***

***Cx:***

* An acute abscess can develop → severe persistent pain (location depending on abscess site); Sudden pain due to rupture (esp. if associated with collapse & rapid deterioration)
* If not properly Rx → chronic inflammation → intermittent pain aggravated by menstruation, dyspareunia & infertility.

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| **Pain of ovarian origin:** |

***Note: This kind of pain is rare (the ovarian itself is insensitive to pain):***

***Ax***: Tumor Cx → pain, e.g.:

* Torsion
* Haemorrhage
* Ix
* Necrosis
* Rupture

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| **Post-hysterectomy:** |

***Ax***: Deep dyspareunia (due to adhesions between vaginal vault & ovaries = “Residual ovary syndrome”

***Mx***: Oophorectomy

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| **Pelvic adhesions:** |

***Ax***: Previous PID; prvious surgery; burnt-out endometriosis

***Mx***: Adhesiolysis during laparotomy OR laparoscopy

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| **Pain from non-gynaecological pelvic organs:** |

***Classification & Ax:***

* Urinary tract – urine dipstix may show blood/white cells:
	+ Acute cystitis
	+ Ureteric calculi
	+ Post-surgery
	+ Over-enlarging uterus → bladder pressure (e.g. retroverted & pregnant) → pain & central mass
* Intestinal:
	+ Appendicitis
	+ Regional ileitis
	+ Diverticulitis
	+ Intestinal obstruction
	+ IBS
	+ Cancer → obstruction → pain
* Thrombophlebitis of pelvic veins after surgery OR due to sepsis → pain + swinging fever + tender pelvic sidewall on PV.
* Mesenteric obstruction (venous) → severe abdominal pain
* Orthopedic Ax:
	+ Osteoarthritis
	+ Spondylolisthesis
	+ Fibromatosis
* Extra-intestinal causes:
	+ Pancreatitis
	+ Cholecystitis
	+ Hepatitis
* Extra-abdominal causes:
	+ Porphyria
	+ Drug withdrawal

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| **Psychogenic pain:** |

***Note: Diagnosis of exclusion***

***Sx & associations:***

* No organic/functional pelvic pathology
* Generally diffuse, poorly localized & non-radiating
* Aggravated by menstruation & sexual intercourse
* Associated with malaise, headaches & depression
* Hx of unhappy childhood, absent parental affection or interest
* 1/3 of these women were sexually abused as children
* ± Left home early or married young
* ± Unsuccessful marriages with ↓ libido
* ± Lack of interest in child-bearing
* ± Sexual dysfunction &/or dyspareunia

***Mx:***

1. **Reassurance**
2. **Psychotherapy (with partner involvement)**
3. **Exercise**
4. **Biofeedback**
5. **Acupuncture**
6. **Transcutaneous electrical stimulation**

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| **Vulvar lesions:** |

***Classification:***

* **Red lesions:**
	+ Candidiasis
	+ Contact dermatitis
	+ Vulvodynia
	+ Systemic skin disorders:
		- Psoriasis
		- Dermatosis
* **White lesions:**
	+ Dystrophies:
		- Lichen sclerosis (↓ skin growth)
		- Vulvar hyperplasia (↑ skin growth)
	+ Vulvar intraepithelial neoplasia
	+ Vitiligo
* **Dark lesions:**
	+ Nevi
	+ Malignant melanoma
* **Ulcers:**
	+ Genital herpes
	+ Syphilis
	+ Lymphogranuloma venereum (LGV)
	+ Granuloma inguinale
	+ Human immunodeficiency virus
	+ Carcinoma (see large tumors)
* **Small tumors:**
	+ Condylomata
	+ Sebaceous cysts
	+ Inclusion cysts
	+ Fibroepithelial polyps
	+ Bartholin abscess
	+ Carcinoma (see large tumors)
* **Large tumors:**
	+ Fibroma
	+ Lipoma
	+ Large condylomata
	+ Carcinoma

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| **Red lesions:** |

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| **Candidiasis:** |

***Note:***

* Not an STD
* Normal flora in vagina – controlled by the microclimate of the vagina, which is hormone dependant

***Sx*** – involvement includes labia minora & majora:

* Severe pruritis
* Burning
* Whitish discharge (thin or thick)
* Oedematous
* Red
* Tender to touch

***Cx*** – recurrences after medical treatment, due to:

* Systemic antibiotics – prolonged/repeated use
* DM
* Corticosteroid use e.g. asthma
* COC’s esp. high dose oestrogen types
* ↓ Immunity e.g. HIV
* Candida species other than C. Albicans.

***Mx*** – manage medically:

1. **Nitroimidazole creams or pessaries – taken daily for 3-6d**
	1. **Clotrimazole**
	2. **Econazole**
	3. **Miconazole**
	4. **Terconazole**
2. **Oral imidazole derivatives:**
	1. **Fluconzaole**
	2. **Itraconazole**
3. **Improve genital hygiene:**
	1. **Cotton panties only**
	2. **Tight clothing avoided**
	3. **Perfumed soap/toiletries avoided**
	4. **Front to back wiping**
	5. **Soaking baths avoided**

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| **Contact dermatitis:** |

***Note:***

* 2nd most common lesion
* Diagnosis of exclusion

***Hx:***

* New soap or deodorant
* Perfumed toiletries incl. bath salts

***Mx***: Omission of suspected irritant agent

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| **Vulvodynia:** |

***Definition***: Painful vulva (uncommon but distressing)

***Dx***: Biopsy

***Mx***: R/F

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| **Systemic skin disorders:** |

***Note: Vulva also affected by systemic skin disorders e.g. SLE***

***Mx***: R/F

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| **White lesions:** |

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| **Vulvar dystrophies (uncommon):** |

***Classification & management:***

* **Lichen sclerosis** – vulva frequently involved; all ages affected:
	+ **Sx:**
		- Pruritis (severe)
		- ± Burning
		- “White ring” surrounding vulva ± anus – hard; leathery; thin
		- Atrophy of labia minora
		- “Buried clitoris” – clitoris buried underneath skin
	+ **Dx**: Biopsy (R/F)
	+ **Mx**: Corticosteroid or testosterone cream
* **Vulvar hyperplasia** – due to chronic irritation:
	+ **Sx:**
		- Pruritis
		- Burning
		- Skin may appear whitish & oedematous
	+ **Dx**: Biopsy (R/F)
	+ **Cx**: Can be pre-malignant (if atypia is present = VIN)
	+ **Mx**: Corticosteroid cream

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| **Vulvar intraepithelial neoplasia:** |

***Note: If any biopsy indicates hyperplasia AND atypical cells → regard as pre-malignant (VIN):***

***Mx:***

* R/F
* Ø:
	+ Vulvectomy
	+ Reconstruction

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| **Vitiligo:** |

***Note: Benign***

***Sx:***

* Widespread, congenital white discolouration of skin
* Hair unaffected (retain pigment)

***Mx***: Reassurance

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| **Dark lesions:** |

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| **Nevi:** |

***Note: Regard as PRE-MALIGNANT!!!***

***Mx***: Ø – excision biopsy

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| **Malignant melanoma:** |

***Note: Rare but aggressive tumors***

***Sx:***

* Black
* ± Speckled with areas of white skin
* ± Raised with irregular papules or patches of skin

***Dx***: Excision biopsy (done at referral centre)

***Mx:***

* R/F promptly
* Ø (Excision biopsy)
* Further cytotoxic Mx e.g. chemoradiation

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| **Ulcers:** |

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| **Genital herpes:** |

***Note:***

* HSV II
* Incubation of ≈ 7d
* 1st attack can last up to 4wk
* Recurrences not as severe as initial attack

***Sx:***

* Acutely painful
* Vesicles (3-5mm) → ulcerate
* Redness & swelling
* ± 2˚ Ix (often) → purulent discharge

***Mx*** – symptomatic:

1. **If mild-moderately ill:**
	1. **Analgesia**
	2. **Antibiotics (for 2˚ Ix)**
	3. **Sitz baths q4hr (NaCl or chlorhexidine H2O)**
	4. **Acyclovir (topical or PO)**
2. **If seriously ill:**
	1. **Acyclovir IVI**
	2. **R/F**
3. **2nd & subsequent attack aren’t as severe as the 1st but Mx remains the same**

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| **Syphilis:** |

***Sx:***

* 1˚ Syphilis:
	+ Chancre:
		- Painless
		- ± Unnoticed on Cx
* 2˚ Syphilis:
	+ Condylomata lata:
		- Multiple
		- Flat
		- Round
		- Shallow
		- Painful

***Mx:***

1. **RPR:**
	1. **If positive → Rx for syphilis**
	2. **If negative → R/F urgently for CA exclusion**
2. **Syphilis Rx:**
	1. **Benzathine penicillin 2.4million units IMI STAT weekly x3 (1.2million units in each buttock)**

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| **Lymphogranuloma venereum:** |

***Note:***

* Ax: C. Trachomatis
* Found in warmer areas
* Classified as an STD

***Sx:***

* Ulcer: Small
* Inguinal lymphnodes: Huge
* Vulvar skin:
	+ Red
	+ Painful
	+ Indurated
* After acute healing → ± scarring → narrowing vagina & anus → severe pain

***Dx***: Chlamydia serology (very common Ix)

***Mx:***

1. **Tetracylines 500mg q6h x21d**
2. **If no response after 1wk → R/F urgently to exclude CA**

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| **Granuloma inguinale:** |

***Note:***

* Ax: Calymmatobacterium
* Classified as an STD

***Sx:***

* Ulcers → ± great tissue loss:
	+ Huge
	+ Shallow
	+ Red
	+ Spreading
* Surrounding tissue: Oedematous
* Inguinal lymphnodes:
	+ Enlarged
	+ ± Suppuration

***Dx***: Donovanosis (bacteria encapsulated in leukocytes) on imprint cytology or biopsy

***Mx:***

1. **Tetracyclines 500mg q6h x3wk**
2. **Vulvar biopsy to exclude CA (mandatory in GI)**
3. **Sitz baths (as for HSV II)**

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| **Human immunodeficiency virus (HIV) ulcers:** |

***Note:***

* Ulcers of varying types & appearances (±)
* Always do HIV VCT
* ***PATIENTS WITH 1 SEXUALLY TRANSMITTED DISEASE MAY HAVE MORE; ALWAYS DO RPR, CERVICAL CYTOLOGY & HIV COUNSELING & TESTING***

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| **Small tumors:** |

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| **Condylomata acuminata:** |

***Note:***

* Ax: Human papilloma virus (HPV)
* STD

***Sx:***

* Warty
* 2˚ Ix → purulent discharge
* Anus & perineum most commonly involved but vulva may also be involved
* May occur on Cx (and → Cx CA)

***Mx:***

1. **If surrounding skin is red, white or forms raised lesions → R/F for biopsy to exclude VIN & CA**
2. **Cx cytology & examination to exclude cervical involvement**
3. **Small lesions:**
	1. **Podophylin ointment applied to warts 2-3x/wk**
	2. **Protect surrounding skin with vaselin ointment**
4. **Large lesions → R/F:**
	1. **Electrocautery**
	2. **Lazer**
	3. **Ø – Excision**

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| **Sebacous cysts:** |

***Ax***: Small obstructed para-follicular glands (i.e. glands next to hair follicles):

***Sx:***

* Benign nature
* Smooth
* Firm
* Light yellow
* Leaking of sebum → pruritis

***Mx***: Excise (if causing pruritis)

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| **Inclusion cysts:** |

***Note: Often found in old episiotomy repair sites***

***Sx:***

* Small, firm, moderately tender cysts
* ± superficial dyspareunia

***Mx***: Excision

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| **Fibroepithelial polyps (very common):** |

***Sx:***

* Small – usually asymptomatic
* Large (due to getting entangled in pubic hair/underwear):
	+ ≥ 5mm
	+ Pain

***Mx***: Excision

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| **Bartholin’s abscess – abscess in Bartholin’s gland:** |

***Ax:***

* Neisseria gonococci
* Chlamydia trachmatis
* Staphylococci
* Streptococci

***Sx:***

* Pain, swelling & warmth over area of Bartholin’s gland (beneath labia minora, within labia majora, where anterior 2/3 meets posterior 1/3.

***Mx:***

1. **Skin drainage – under local/GA**
2. **Marsupialization esp. if recurring**
3. **Analgesia e.g. ibuprofen &/or paracetamol**
4. **Antibiotics e.g. Tetracyclines for 10d**
5. **Sitz baths**

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| **Large tumors:** |

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| **Fibromas & lipomas:** |

***Sx***: Benign; from fibrous/fatty tissue respectively; occur at any site

***Mx***: Large vulvar tumors require R/F & Ø removal

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| **Large condylomata acuminata:** |

***Note:***

* ↑ size esp. in pregnancy
* Difficult to differentiate from CA

***Mx***: R/F & biopsy

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| **Carcinoma of vulva:** |

***Note:***

* 35-75yr
* 5% of gynaecological CA

***Sx:***

* Small tender “ulcer” initially → grow
* Large ulcer OR
* Exophytic tumor
* Inguinal lymphnode involvement

***Dx***: Biopsy (in this case will indicate squamous CA – due to underlying HPV Ix)

***Mx:***

1. **R/F**
2. **Ø – Radical vulvectomy with groin node dissection**
3. **± Radiotherapy**
4. **Post-operative nursing – wound care**
5. **Palliation**

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| **Pruritis vulvae:** |

***Ax:***

* Candidia albicans
* Trichomonas vaginalis
* Contact dermatitis
* Generalized skin diseases
* Drug reactions

***Mx:***

1. **Avoid irritants**
2. **Improve genital hygiene**
3. **All pts. given trial of anti-candida Rx:**
	1. **If improvement → repeat dose prn**
	2. **If no improvement → add metronidazole STAT**
4. **Persistent Sx’s benefit from long term application of anti-candida medications**
5. **Consider anti-pruritis for systemic pruritis with vulvar manifestations**

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| **Vaginal discharge:** |

***Classification of vaginal discharge:***

* Diffuse discharge
	+ Physiological
	+ Infectious
		- Vaginitis
			* Trichomonas
			* Candida spp.
			* Bacterial vaginosis
		- Endocervicitis:
			* Neisseria gonohorrhoea
			* Chlamydia trachomatis
	+ Atrophic
	+ Irritants & allergens
* Localized discharge
	+ Foreign body
	+ Fistula
	+ Neoplasia
* Cervical discharge
	+ Physiological
	+ Pathological
		- Endocervicitis
		- Neoplasia

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| **Physiological vaginal discharge:** |

***Characteristics:***

* Fluctuates with menstrual cycles (with regards to amount & consistency)
* No malodorous, irritating or blood stained
* Clear or white
* Non-homogenous/flocculating
* pH < 5
* Whiff test is negative
* No vulvar ulcers, rash, erythema, CET
* Epithelial cells & lactobacilli on wet mount smear

***Ax:***

* Oestrogen → stimulation of lactobacilli → ↑ lactic acid formation (from glycogen in the discharge) → ↓ pH → infection non-friendly environment. (The rest of the discharge consists of endocervical mucus, exfoliated epithelial cells & vaginal transudate)

***Mx:***

1. **Reassure**
2. **No specific Rx**
3. **No further investigations/tests**
4. **If pt. still unhappy → R/F for 2nd opinion, or R/F microscopy, or do vaginal swab & send for M, C & S**

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| **Atrophic vaginosis:** |

***General:***

* Postmenopausal
* Sx’s of genital atrophy

***Ax:***

* ↓ Oestrogen (MP) → ↓ discharge & glycogen → non-flourishing lactobacilli → ↑ pH → 2˚ bacterial Ix

***Sx:***

* ↓ SC fat → less prominent labia majora
* Introitus narrows
* Epithelium → pale & shiny
* ↓ Vaginal rugae
* ± Small bleedings
* Cx → smaller with smaller diameter; ↓ intravaginal portion; no endocervical mucus
* ± Urethral mucosa prolapse (may be small)

***Dx:***

* Vaginal pH ↑ → 6.5-7.0
* On wet mount – more pus cells (polymorphs) than epithelial cells AND no lactobacilli

***Mx:***

1. **Exclude CA & other causes for PMB 1st !!! (If excluded → proceed to point 2.)**
	1. **Cx cytology**
	2. **Cx biopsy (if any suspicious lesion is found)**
	3. **Endometrial biopsy (if the discharge is bloodstained)**
2. **Oestrogen cream 0.5-1 applicator nocte PV x1wk**
3. **↓ Oestrogen to every other night x2wk**
4. **Continued every week prn**
5. **Add progestogens if long term oestrogen Rx is requires (if the patients uterus is still in-situ)**

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| **Vaginal discharge due to infections:** |

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| **Trachomonas vaginalis:** |

***Sx & characteristics:***

* Red vagina; ± Cervical/vaginal swelling
* Pain & dyspareunia
* Dysuria & frequency
* ± “Strawberry-red” appearance of cervix
* Malodorous
* Profuse, grey-white to yellow-green discharge
* ± Bubbles
* pH > 5.0 (discharge’s pH)

***Dx***: Motile trichomonads of NaCl wet mount smear (microscopy)

***Mx:***

1. **If not pregnant:**
	1. **Metronidazole 2g STAT PO (Warn her not to take alcohol during until ≥ 24hr after dose)**
2. **If pregnant:**
	1. **Clotrimazole pessaries 100mg nocte x6nights**
3. **Counseled about STD nature of disease → Rx consort**
4. **Counseled on responsible sexual behaviour:**
	1. **Condoms**
	2. **COC’s**
5. **Counseled on risk for other STD’s & HIV:**
6. **Test for other STD’s (picture often mixed)**
7. **HIV VCT**

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| **Vaginal candidiasis:** |

***Sx & characteristics:***

* Watery to thick white discharge
* Scant to moderate
* Clumped
* Plaques on vaginal walls
* pH < 5.0
* Vulvar pruritis (aggravated during last week of menstruation)
* Vaginal/vulvar/introital redness & inflammation

***Dx***: Budding yeast cells OR hypae on K-OH wet mount (microscopy)

***Mx:***

1. **Anti-fungal Rx:**
	1. **PV administration types:**
		1. **Clotrimazole 100mg bd x6 OR 500mg STAT**
		2. **Miconazole 200mg bd x7**
		3. **Econazole 150mg/d x3d OR 150mg depot STAT**
	2. **Oral type:**
		1. **Fluconazole 150mg STAT**
2. **If associated vulvitis → prescribe extra antifungal cream**
3. **Exclude/remove predisposing factors:**
	1. **Personal habits:**
		1. **Deodorant use**
		2. **Douches**
		3. **Perfumed toilet paper**
		4. **Bubble baths**
		5. **Tight nylon underwear**
	2. **Pregnancy**
	3. **Pills:**
		1. **Braod spectrum anti-biotics**
		2. **Corticosteroids**
		3. **Contraceptives (with high oestrogen content)**
	4. **Physical disease:**
		1. **Immunosuppression**
		2. **DM**

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| **Bacterial vaginosis:** |

***Sx & characteristics:***

* Thin, malodorous discharge
* Homogenous
* White to grey
* pH > 5.0
* No vaginal/vulvar redness

***Dx:***

* Positive whiff test
* Clue cells on NaCl wet mount smear (epithelial cells coated by coccobacilli → granular appearance/indistinct margins)

***Cx:***

* Prematurity
* PROM
* Postpartum endometritis
* Risk of Ix after gynaecological procedures

***NOTE: TREAT ALL SYMPTOMATIC PATIENTS AS WELL AS ASYMPTOMATIC PATIENTS THAT ARE PREGNANT OR SCHEDULED TO UNDERGO A GYNAECOLOGICAL PROCEDURE OR OPERATION***

***Mx:***

1. **Metronidazole 400mg tds PO x7d (deferred until end of 1st TM in pregnancy)**
2. **Counsel patient:**
	1. **STD’s & HIV**
	2. **Condom use**
	3. **Treating her consort or sexual contacts**
3. **Test for & treat any other STD’s**
4. **HIV VCT**

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| **Vaginitis caused by foreign bodies, irritants & allergens:** |

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| **Foreign body vaginitis:** |

***Sx & characteristics:***

* Watery, profuse & malodorous
* Foreign body visible on careful speculum examination
	+ Forgotten tampons
	+ Pessaries
	+ IUCD
	+ Plastic, wood etc. (accidentally placed in vagina)

***Mx:***

1. **Remove foreign body**
2. **Sitz baths or douching (NaCl water)**
3. **No antibiotics (clearance of obstruction → clearance of Ix)**
4. **If caused by IUCD:**
	1. **Place patient on suitable & alternative contraception (unless patient has PID → REMOVE!!)**

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| **Allergenic/irritant induced vaginitis:** |

***Sx & characteristics:***

* Hx of irritant use e.g. soaps, lubricants, spermacide, perfumed toilet paper/sanitary towels, powders or feminine hygiene products
* Discharge not prominent
* Inflamed &/or oedematous vulva/vagina
* pH > 5 due to alkaline douches
* All other causes of pruritic discharge are excluded:
	+ Whiif test negative
	+ Wet mount smear negative
	+ Candida culture showed no growth (only done if a smear can’t be done)

***Mx:***

1. **Stop offending agents**
2. **1% Hydrocortisone cream bd x7d**

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| **Vaginal discharge due to neoplasia:** |

***Sx & characteristics:***

* Associated with postcoital/spontaneous bleeding
* ± Responds poorly to normal Rx
* Watery, malodorous
* ± Bloodstained
* Localized CA on careful inspection e.g. CxCA

***Mx:***

1. **If suspicious lesion → punch biopsy**
2. **Cervical smear – cytology**
3. **Antibiotics – trial of Rx (while awaiting biopsy results):**
	1. **Amoxil 250mg tds**
	2. **Metronidazole 200mg tds**

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| **Vaginal discharge due to fistulas:** |

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| **Rectovaginal fistula:** |

***Ax:***

* Obstetric trauma
* Irradiation
* Malignancy

***Sx & characteristics:***

* ± Incontinence of faeces/flatus (continually or only when she has diarhhoea)
* Faecal soiling of vagina
* ± Vaginal opening of fistula may be seen

***Mx:***

1. **R/F for Ø repair**
2. **Antibiotics while awaiting transfer:**
	1. **Amoxil 250mg tds**
	2. **Metronidazole 200mg tds**

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| **Urinary fistula:** |

***Ax:***

* Previous pelvic surgery (most commonly accidents done by gynae’s themselves)
* Obstetric trauma
* Radiation
* Malignancy

***Sx & characteristics:***

* Urinary incontinence (usually continuously)
* Urine draining observed on examination
* Vaginal opening of fistula

***Mx***: R/F

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| **Acute cervicitis & pelvic inflammatory disease:** |

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| **Acute cervicitis:** |

***Ax:***

* Chlamydia trachomatis
* Neisseria Gonorrhoea
* HSV
* Gram negatives (mixed)
* Gram positives (mixed)

***Hx:***

* Intermenstrual/post-coital bleeding (differential for CxCA)
* C. Trachomatis usually asymptomatic
* HVS is painless & presents with small blisters & ulcers on Cx
* Spread to ligaments of uterus or bladder (lymphatic spread) → pain on intercourse &/or micturition

***Sx:***

* Purulent discharge; muco-purulent
* Cx redness & oedema
* Cx ulceration (HSV)
* ± Cx tenderness

***NOTE: CET IMPLIES FALLOPIAN TUBE INVOLVEMENT AN SALPINGITIS IS THEN DIAGNOSED & TREATED***

***Dx:***

* Wet mount smear
* Clinical diagnosis

***Mx:***

1. **PAP smear – if HVS is suspected, wait for results before commencing Rx**
2. **Non-pregnant patients:**
	1. **Ciptofloxacin 500mg PO STAT OR Ofloxacin 400mg PO STAT**

**PLUS**

* 1. **Doxycycline 100mg q12h x10d OR Tetracycline 500mg q6h x10d**
1. **Pregnant patients:**
	1. **Ceftriaxone 250mg IMI STAT OR Spectinomycin 2g IMI STAT**

**PLUS**

* 1. **Erythromycin 500mg q6h x10**
1. **Counsel:**
	1. **STD’s & HIV VCT**
	2. **Treat consort & contacts**
	3. **Condomise**
	4. **COC (if non-pregnant)**

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| **Pelvic inflammatory disease (PID):** |

***Note:***

* Ascending genital Ix
* General term, which includes:
	+ Endometritis
	+ Salpingitis
	+ Peritonitis
	+ Tuno-ovarian abscess

***Ax***: Sexually transmitted vectors e.g. sperm & trichomonads ↑ spread of the following (polymicrobial disease):

* Gonococci
* Chlamydia

***NOTE: SUPERSESSION BY 2˚ GRAM NEGATIVES &/OR ANAEROBES***

***Pathogenesis:***

* Mild salpingitis involves tubes (swollen & red BUT still mobile & open) → spreads to adjacent pelvis → tubal/tubo-ovarian abscess → ± rupture → generalized peritonitis → severe illness & ± death. Scarring of pelvic organs (fibrosis) → tubo-ovarian complex &/or hydrosalpinx → chronic salipngitis (Asymptomatic) Recurrent re-infections now occur more easily – syndrome is called chronic PID.

***Risk factors:***

* Young & sexually active
* Multiple sex partners, new partner or partner with multiple partners
* Other STD’s
* HIV positive patients
* IUCD – in the light of Ix → accelerate ascending spread of pathogens through Cx

***Sx:***

* LAP + vaginal discharge + fever
* Flu-like symptoms
* GIT & bladder (dysuria) Sx
* Infertility (late Sx)
* Fever & tachycardia
* Tenderness on abdominal Ex
* Rebound & guarding of lower/whole abdomen (severe sign)
* Purulent/infectious discharge
* CET
* Tender adnexal masses suggests infective (esp. if semi-cystic & bilateral) – tubo-ovarian complex

***Staging of PID:***

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| **Stage I** | Early salpingitis; local tenderness |
| **Stage II** | Salpingitis & localized peritonitis (rebound & guarding) |
| **Stage III** | As for I & II + inflammatory mass (guarding may hinder palpation) |
| **Stage IV** | Rupturing of inflammatory mass → acute abdomen; generalized peritonitis; failure to respond to medical Rx; septic shock picture → R/F Ø Mx |

***Differential Dx:***

* Cx of pregnancy – ectopic; abortions
* GIT – appendicitis
* UTIx & kidney stones
* Endometritis

***Cx:***

* Infertility
* ↑ Risk of ectopic pregnancy
* Ovarian destruction
* ± Need to perform hysterectomy (stages III & IV)
* STD’s
* Death

***Mx:***

1. **↓ Risk:**
	1. **Monogomy**
	2. **Condoms (male or female condoms)**
	3. **COC or IJ-contraception**
	4. **Pregnancy (almost impossible to get it during pregnancy – not a recommended method of prevention)**
2. **Outpatient Rx – only stages I & early II:**
	1. **Ciptofloxacin 500mg PO STAT OR Ofloxacin 400mg PO STAT**
		* + - **PLUS**
	2. **Doxycycline 100mg q12h x10d OR Tetracycline 500mg q6h x10d**
	3. **Metronidazole 400mg bd x10d**
	4. **F/U arrangements or told to return if they deteriorate → admit**
3. **Inpatient Rx – Late stage II, stages III & stage IV:**
	1. **If generalized peritonitis present:**
		1. **R/F promptly**
		2. **IV line & resuscitation + 1st dose of antibiotics**
		3. **Analgesia (consider morphine)**
	2. **Symptomatic Rx:**
		1. **Analgesia**
		2. **Adequate fluids**
	3. **Monitor vitals esp. T˚, pulse & abdominal signs**
	4. **Anti-biotics:**
		1. **Regimen 1:**
			* **Cefoxitin 2g IV q6hr PLUS**
			* **Doxycycline 100mg IVI q12hr**
		2. **Regimen 2:**
			* **Ampicillin 1g IV q6hr PLUS**
			* **Gentamycin 1.5mg/kg IV q8hr PLUS**
			* **Metronidazole 1g PR q12hr OR 500mg IV q8hr**
		3. **Regimen 3:**
			* **Clindamycin 900mg IV q8hr PLUS**
			* **Gentamycin 1.5mg/kg IV q8hr**
	5. **Continue IV Rx for 48hr after clinical response**
	6. **Discharge with the following antibiotics:**
		1. **Doxycycline 100mg bd PO AND**
		2. **Metronidazole 400mg tds PO**
	7. **If ≥ 2 organ systems failed (MODS) incl. the genital system; is black cervix present; perforated uterus rupture; deteriorating & unresponding to Rx → consider hysterectomy**

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| **Sexually transmitted diseases (STD):** |

**Mx**: Syndromic approach (primary health care) – you must, however, know individual treatment:

***If genital ulcer:***

1. **HSV II & LGV excluded clinically**
2. **Rx for syphilis & haemophilus ducrei (Chancroid):**
	1. **Do RPR (treat only for syphilis & LGV/GI if positive or if test not available else only for LGV/GI if negative)**
	2. **Benzathine benzylpenicillin LA 2.4million units IMI STAT PLUS**
	3. **Ciprolfloxacin 500mg PO STAT OR Oflaxacin 400mg PO STAT**

**OR**

* 1. **Erythromycin 500mg PO daily x5d (if pregnant/allergic to penicillin)**

***If vaginal discharge:***

1. **Ciproflaxacin 500mg PO STAT OR Oflaxacin 400mg PO STAT**
	* + - * **PLUS**
2. **Doxycyline 100mg PO q12hr x10d OR Tetracycline 500mg PO q6hr x10d**
	* + - * **PLUS**
3. **Metronidazole 400mg PO q12hr x7d**

***If urethral disachrge (males):***

1. **Ciproflaxacin 500mg PO STAT OR Ofloxacin 400mg PO STAT**
	* + - * **PLUS**
2. **Doxycycline 100mg PO q12hr x10d OR Tetracycline 500mg PO q6hr x10d**
	* + - * **OR**
3. **Azithromycin 1g PO STAT**

***Counseling: Behavioural changes:***

1. **Abstinence**
2. **Monogomous relationships**
3. **Non-penetrative sex (relative risk reduction but not 100% effective)**
4. **Barrier contraception**
5. **COC’s, IJ-contracptions, IUCD**
6. **Test for other STD’s**
7. **HIV VCT**
8. **Trace & treat contacts**

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| **HIV in gynaecology:** |

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| **HIV & gynaecological neoplasia:** |

***HPV, CIN & CxCA:***

* Higher association of HPV in HIV
* Dx hindered by ↑ presence of associated STD’s i.e. Gonococcus; Trichomonas; Chlamydia →must have higher index of suspicion
* 6 monthly Cx cytology (PAP smear) → R/F for colposcopy for any cellular atypia
* Treat any other STD’s before repeating PAP smear
* CxCA usually presents in more advanced stages
* Early aggressive Rx of CIN I → don’t F/U but rather do LLETZ
* HIV doesn’t affect surgical Mx

***Vulvar/vaginal neoplasia:***

* Condylomata (progresses quickly: Mx – thorough perineal hygiene & Rx with lazer/cautery
* Squamous CA: Mx – vigilant F/U & early biopsy due to early metastases (esp. ano-rectal involvement); later presentation; more aggressive progression

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| **HIV & gynaecological infection:** |

***Vulvovaginal candida***:

Mx – prolonged local & systemic Rx often needed

***STD’s*** (↑ resistance to Rx & ↑ recurrence rate):

Mx – Rx actively → ↓ HIV transmission

***PID:***

Mx – often need longer hospitalization & more frequent change in antibiotics; also suspect TB PID

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| **HIV & contraception:** |

***Methods:***

* “Brace & belt” method: IJ/tubal ligation (recommended) PLUS Condoms
* Contraception not preferably used in HIV:
	+ COC’s – ↑ failure rate
	+ IUCD – ↑ risk of Ix

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| **HIV & fertility considerations:** |

***Note:***

* Fertility ↓ due to recurrent & ↑ Ix; weight loss (which leas to anovulation)
* Assisted reproduction not considered on ethical or social grounds – to prevent vertical transmission

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| **HIV & menstual disorders:** |

***Note:***

* ↑ Menorrhagia due to chronic endometritis
* Rx actively (↑ risk of transmission during menstruation & ↑ risk of sever anaemia)

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| **HIV & gynaecological Ø:** |

***Note:***

* No significant ↑ in morbidity or mortality (if asymptomatic); no effect on rate of immune suppression
* Symptomatic patients usually have ↓ weight, anaemia etc. → ↑ Ø risks
* Ø should be planned with limited objective/goal in mind (with small incision)
* Ø has limited palliative role in AIDS – patient with low CD4 not given routine Ø

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| **Pelvic masses:** |

***Classification:***

* Benign disease:
	+ Female internal genitalia:
		- Uterus
			* Pregnancy
			* Myomata
		- Ovaries
			* Solid benign tumors
			* Functional cysts
		- Fallopian tubes ± ovarian involvement
			* Extra-uterine pregnancy
			* Inflammatory masses
			* Endometritis
	+ Other pelvic organs:
		- Bladder – full bladder
		- Bowel
			* Faecal impaction
			* Diverticulosis
			* Chronic inflammatory masses
		- Retroperitoneal organs
			* Pelvic kidney
			* Massively enlarged LN’s
			* Psoas muscle abscess
* Malignant disease:
	+ Female internal genitalia
		- Uterus
			* CxCA
			* Endometrial CA
			* Sarcoma
		- Ovaries
			* Ovarian CA
	+ Other pelvic organs:
		- Bladder CA
		- Bowel
			* Colon CA
			* Rectal CA
		- Retroperitoneal organs
			* Sarcomas or soft-tissues

***Gynaecological US – indications:***

* Bleeding in early pregnancy
* Suspected ovarian cysts
* PMB
* PID
* IVF
* Urinary incontinence
* Cx CA
* Suspected congenital abnormalities of uterus/vagina

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| **Myomatous uterus:** |

***Dx:***

* **Hx:**
	+ Painless OR
	+ Doscomfort; backache; heavy-feeling; pressure Sx’s of bladder/bowel
	+ ↑ Blood loss during menstruation (usually cyclical) →
	+ Dysmoenorrhoea & anaemia
* **Ex:**
	+ ± Anaemia
	+ Distension; lower abdominal pelvic mass (rarely fills abdomen like term pregnancy)
	+ Cervix displaced & small
	+ Uterus ± enlarged/globular OR single palpable myomata (soild; non-tender; mobile)
	+ ± Fill whole pelvis & hollow of sacrum → determined on PR

***Mx:***

1. **Oserved under following conditions:**
	1. **Mayomata not growing fas & relatively asymptomatic**
	2. **Uterus size < 16wk & Dx relatively certain**
	3. **Patient premenopausal not wishing to have surgery**
2. **R/F for Ø, esp. if:**
	1. **Excessive menstrual loss**
	2. **Anaemia**
	3. **↑ size of masses esp. if growth rapid**
	4. **Massess associated with pain, distension &/or bowel Sx’s**
	5. **Bladder Sx’s**
3. **Ø:**
	1. **TAH OR**
	2. **Myomectomy (in pts. wishing to retain uterus):**
		1. **Not always feasible, due to:**
			* **Adhesions**
			* **Multiple myomata**
			* **Intra-operative bleeding**
		2. **Cx:**
			* **Future fertility no guaranteed**
			* **± Severe re-bleeding/recurrence**

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| **Functional cysts:** |

***Note: Only in woman of reproductive age, not using contraception & has menstrual cycle.***

***Sx:***

* Vague pain in fossa iliaca
* ± Menstrual disturbances
* Mass palpable on PV:
	+ Cystic
	+ Non-tender (relatively)
	+ < 6cm in diameter
	+ Freely mobile & unilateral;

***Mx*** – 4 options:

1. **F/U in 6-8wk → if still present → R/F**
2. **COC or short course MPA (to suppress ovulation & “shrink” tumor) → F/U 1-2wk later → if persistent → R/F**
3. **Spontaneous resolution → if this doesn’t happen → R/F**
4. **Ø for persistent or potentially harmful cyst – cystectomy & ovary preservation prferred:**
	1. **Laparoscopic**
	2. **Laparotomy**
5. **At referral centre US is done before any decision is made**

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| **Benign solid ovarian tumors:** |

***Note: Regard as CA until proven otherwise → R/F!!! for histology & Mx***

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| **Infectious masses:** |

***Dx:***

* **Hx:**
	+ Young & almost in reproductive years
	+ Hx of previous pelvic Ix ± previous Ø
* **Ex:**
	+ See PID & staging
	+ Bilateral masses on bimanual PV:
		- Fixed to uterus
		- Size < 10wk
		- ± poorly circumscribed
		- ± Not freely mobile
		- Semi-cystic

***Mx:***

1. **Rx for Ix but F/U to exclude CA (R/F to surgery if Dx uncertain or change in clinical picture)**
2. **Rx any active Ix as for PID → ↓ size of initial mass & improve Sx**
3. **No antibiotics Rx in burnt out disease (hydrosalpinx)**
4. **F/U – providing mass doesn’t ↑ size & patient remain asymptomatic**

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| **Gynaecological malignancy:** |

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| **Cervix cancer:** |

***Screening for CxCA:***

* PAP smear (90% sensitive & 80% specific)
* 3 smears in a lifetime: At 35; 45 & 55yr (RSA)

***Cervical carcinogenesis – pathogenesis:***

* Normal cervix has multi-layered squamous epithelium on outside (ecto-cervix) & columnar mucus producing epithelium in the cervical canal (endo-cervix) – where they meet is called the squamo-columnar junction..
* Proliferation of endocervix, under the influence of estrogen (from puberty → menopause) grows outwards, which is protected from acidic vagina (low pH) by squamous metaplasia of the outer layer. This regresses when estrogen ↓ e.g. menstruation.
* The transition zone is the area of exposed columnar epithelium under this metaplastic squamous covering.
* Since these cells are rapidly dividing, any carcinogen exposure at the time of this dynamic process → dysplasia of the squamous cells → CIN lesion.
* Carcinogens: HPV

***Risk factors for cervix cancer development:***

* Young 1st coitus age
* Multiple sex partners
* Partner with HPV (through intercourse)
* Partner with HIV
* Low socio-economic status

***Pre-malignant lesions*** – graded according to the depth of involvement of dysplastic cells – cells mature from the inside towards the outside (on Papinicolaou smear):

* **CIN I:** Dysplastic cells in lower 1/3
* **CIN II:** In lower 2/3
* **CIN III:** Full thickness

***Reasons for false positive (i.e. patient diagnosed has having CIN when she doesn’t)***

* Viginal atrophy
* Trichomonas vaginalis infection
* Severe folic acid deficiency
* Laboratory errors

***Reasons for false negatives (Tested negative but has disease)***

* Cervix not visualized
* Smear not taken from transformation zone
* Too few cells on the slide
* Not properly fixed to slide
* Laboratory erros

***Differential diagnosis:***

* Carcinoma
* HPV & CIN
* HSV
* Bilharziasis
* Other granuloma
* Large condylomata acuminata

***Reporting of results:*** **Bethesda** classification (cytology) vs. **CIN** classification (histology) – now used interchangeably

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| --- | --- |
| **Bethesda classification** | **CIN classification** |
| Squamous atypia | Squamous atypia |
| Squamous intra-epithelial lesion (low grade) | HPV |
| CIN I |
| Squamous intra-epithelial lesion (high grade) | CIN II |
| CIN III |

Bethesda classification (complete):

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| **Abbreviation** | **Meaning** | **Mx** |
| **ASC-US** | Atypical squamous celss of undetermined significance | Repeat PAP q6mo x3; if it persists → R/F colposcopy |
| **ASC-H** | Atypical squamous cells – cannot exclude HSIL | R/F colposcopy |
| **AGC** | Atypic glandular cells  | Rx antibiotics & repeat smear in 6wk; If persists → R/F colposcopy |
| **AGV – favour neoplastic (Endocervical adenocarcinoma in-situ)** | Atypic glandular cells | R/F colposcopy |
| **LSIL (low grade SIL)** | HPV OR CIN 1 | Repeat PAP q6mo x2; If persists R/F colposcopy |
| **HSIL (high grade SIL)** | CIN 2 or CIN 3 | R/F colposcopy |
| **Cancer** | Sqamous/adenocarcinoma | R/F immediately for colposcopy |
| **Unsatisfactory** | No Dx can be made | Repeat PAP |
| **Unsatisfactory for evaluation** | Reason will be given | Repeat PAP |

***Procedure for abnormal smear:***

1. If “atypia”. “HPV” or “CIN I” are found → repeat at 3-6mo:
	1. If next smear normal → repeat annually
	2. If still abnormal → R/F for cervix colposcopy
2. If “HPV + CIN I”, “CIN II” or “CIN III” → R/F for cervix colposcopy
3. If “Sx of invasive CA” → R/F to large centre for cancer work-up & treatment
4. Colposcopy (bath cervix in 3-4% acetic acid – lesions appear white) – 3 options:
	1. On-the-spot removal & treatment under local anaesthesia – Lazer/LLETZ
	2. Biopsied only & treatment later (Lazer; LLETZ; hysterectomy)
	3. If not visualized → cone biopsy under GA
5. Treatment – 2 options:
	1. Wishes to retain her uterus & fertility: Lazer/LLETZ/cone biopsy
	2. Family completed: Hysterectomy (vaginal or abdominal)
6. F/U – 2 cervical smears 4 months apart

***Alternatives to cytology*** – not as effective:

* Naked eye examination – sensitive but not specific (cervix bathed in 3-4% acetic acid)
* Cervicography (photograph) → consult specialist

***CxCA – staging & Mx:***

|  |  |  |
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| **Stage** | **Description** | **Mx** |
| ***Stage I (confined to Cx)*** |
| **Ia (depth dependant)****≤ 5mm deep; ≤ 7mm wide** |
| **Ia1** | ≤ 3mm deep; ≤ 7mm wide | Cone biopsy or simple hysterectomy |
| **Ia­2** | 3-5mm deep; ≤7mm wide | Simple hysterectomy or radical tracelectomy & bilateral pelvic LN dissection |
| **Ib (width dependant)****≥ 5mm deep; ≥ 7mm wide** |
| **Ib1** | ≤ 4cm diameter | Radical hysterectomy & bilateral pelic LN dissection |
| **Ib2** | ≥ 4cm diameter | Primary radical chemo-radiation |
| ***Stage II (spread direction)*** |
| **IIa (vertical spread)** | Lesion from cervix to vaginal fornix | Primary radical Ø or chemo-radiation |
| **IIb (horizontal spread)** | Lesion extends to parametria but not to pelvic side-wall | Primary radical chemo-radiation |
| ***Stage III (↑ spread)*** |
| **IIIa (vertical)** | Lesion to lower 1/3 of vagina | Primary radical radiation |
| **IIIb (horizontal)** | Lesion to pelvic side wall(s) &/or hydronephrosis | Primary radical radiation |
| ***Stage IV (infiltration & metastases)*** |
| **IVa** | Bladder/rectal involvemnent | Palliative care ± diversion Ø |
| **IVb** | Distant metastases | Palliative care |

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| **Ovarian cancer:** |

***Screening for ovarian cancer (OCA):*** No screening test meets criteria satisfactorily:

***What can be done to ↑ detection of OCA:***

1. **Good clinical & risk assessment:**
	1. **↑ risk:**
		1. **Family history of OCA (1st degree relatives)**
		2. **Postmenopausal**
		3. **Infertility due to anovulation**
		4. **Abnormal menstrual cycles (during menstrual years)**
		5. **Other adenocarcinomas e.g. colon, breast & endometrium**
	2. **↓ risk:**
		1. **Young age**
		2. **Use of COC**
		3. **Multiparity**
2. **Pelvic US (by vaginal probe)**
3. **Ca-125 (non-specific tumor marker raised in OCA)**
4. **Color Doppler flow studies of tumor**

***Sx*** – non-specific:

* Chronic non-specific GIT complaints
* Abdominal discomfort OR feeling of fullness
* Cachexia
* Abdominal mass
* Ascities

***Interpretation of US*** – Suggestive of CA:

* Size ≥ 5cm in diameter
* Solid OR semi-solid OR semi-cystic
* If cystic:
	+ Multi-cystic, visible papillary growths on the septae or surface
	+ Thick septae
	+ Non-homogenous, non-echo-free contents

***Mx:***

1. **R/F if suspected**
2. **Blood tests:**
	1. **FBC**
	2. **UKE**
	3. **LFT**
	4. **Tumor markers – CA125; CA19-9**
3. **Ø:**
	1. **TAH & BSO**
	2. **Omentumectomy**
	3. **Ascites removed**
	4. **Excise seeds to omentum (conservative Ø)**
4. **Chemotherapy**

***Good clinical practice:***

1. **Advised to report chronic Sx esp. GIT Sx**
2. **Regular check-ups (annually in post-menopausal patients)**
3. **Good clinical & risk assessment**

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| **Endometrial cancer (ECA):** |

***Sx:***

* Abnormal uterine bleeding (e.g. after menopause)

***“Screening tests”*** – no effective test meeting criteria – diagnosis made on clinical assessment:

* Good clinical & risk assessment
* US (endometrial thickness)
* Endometrial biopsy (pipelle or z-sampler) – indications:
	+ PMB
	+ Excessive & intermenstrual bleeding in the peri-menopause (menometrorhagia) i.e. ≥ 40yr
	+ Late menopause (≥ 55yr)
	+ Endometrial cells reported on PAP smear in post-menopausal patient
	+ Bleeding while on HRT – not related to placebo pills (opposed oestrogen HRT)
	+ ♀ on tamoxifen for metastatic breast CA (annually)

***Risk factors for ECA:***

* Postmenopausal
* Obesity
* Hx of chronic abnormal menstruation
* Infertility due to anovulation
* Associated DM &/or HT
* Polycystic ovarian syndrome
* Hx of unopposed oestrogen therapy with uterus still intact
* Hx of other adenocarcinomas (see above)

***Decreased risk for endometrial carcinoma:***

* Slender (not obese)
* COC use
* Opposed oestrogen (with progestogen) HRT at menopause

***Differential Dx for post-menopausal bleeding (in order of incidence):***

* Atrophy (hypo-oestrogen induced) – 45% (🛈 DIAGNOSIS BY EXCLUSION ‼)
* Endometrial CA/cervix CA/endometrial hyperplasia – 25%
* Polyps/submucus myomata – 15%
* HRT induced bleeding – 10%
* Non-gynaecological bleeding e.g. PR; trauma; bladder – 5%

***Mx:***

1. **If abnormal histology found → R/F for Ø:**
	1. **Endometrial ablation Rx (not preferred)**
	2. **Hysterectomy**

***Good clinical practice:***

1. **Uterus-in-situ → opposed oestrogen HRT**
2. **Don’t take PMB lightly – investigate thoroughly**
3. **Educate women about PMB when they enter menopause**
4. **Regular check-ups (annually in high-risk women)**
5. **US to asses endometrial thickness**

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| **General metastatic work-up:** |

***Staging of disease:***

* FBC
* UKE
* LFT
* Biopsy (if indicated e.g. suspicious Cx lesion) – types (see indications):
	+ Cone (Cx)
	+ LLETZ (Cx)
	+ FNA (BRCA)
	+ Pipelle (Endometrial CA)
	+ Excision biopsy (CA in-situ)
	+ Punch biopsy (Cx & vulva CA)
* Tumor markers
	+ CA 19-9
	+ CA 125
	+ ALP
	+ LDH
* CXR
* Bone scan
* Pelvic sonar:
	+ Transvaginal
	+ Suprapubic transcutaneous
* Abdominal sonar
* CT/MRI scan (esp. of brain)
* Cystoscopy/proctoscopy
* Angiography/Doppler
* LN biopsy e.g. sentinel node in BRCA

***Anaesthetic risk assessment:***

* Vitals
* General indicators of disease
* Full systemic examination

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| **Gestational trophoblastic disease:** |

***Classification:***

* Hydatiform mole (complete or partial)
* Invasive mole
* Choriocarcinoma

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| **Hydatiform mole:** |

***Sx:***

* Sx’s of early pregnancy e.g. ↑ N&V; ↑ breast tenderness
* Amenorrhoea
* Postive pregnancy test
* PVB
* Passage of vesicle PV
* Hyperemesis gravidarum
* Uterus large for dates
* ± Bilateral theca lutein cysts with ovarian enlargement
* 20% have proteinuria & hypertension
* 10% have feature of thyrotoxicosis

***Dx:***

* US – enlraged uterus with echolucent black hole with white rims
* CXR
* Quantitative βHCG
* FBC
* Blood group testing
* TFTs

***Mx:***

1. **Uterus evacuated by suction & curettage (if size ≥ 14wk do this under US guidance)**
2. **Give Oxtocin IV**
3. **Send curettings for histology**
4. **D/C with reliable contraception**
5. **F/U with βHCG measurements q2wk until normal (< 10IU/l) → monthly F/U**
6. **Risk of recurrence – rule out with subsequent pregnancies**

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| **Invasive mole:** |

***Sx:***

* Ongoing bleeding after molar pregnancy evacuation
* Sx’s from metastases esp. vagina (blue-black nodules)
* Enlarged uterus
* Persistent bilateral ovarian enlargement
* S-βHCG measurable beyond 6-8wk after evacuation

***Dx*** – do CT/upper abdominal US if any of the following are abnormal:

* CXR
* LFT’s
* Pelvic US
* S-βCHG ≥ 40000IU/l

***Mx:***

1. **Repeat suction evacuation**
2. **If quantitative S-βHCG levels decrease → F/U**
3. **Chemotherapy is usually required**

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| **Choriocarcinoma:** |

***Sx:***

* Uterus contains tumors
* PVB
* Sx’s of metastatic disease:
	+ Lungs: Haemoptysis
	+ Vagina: Bleeding & nodules
	+ Brain: Seizures; ↓ LOC; focal neurological Sx’s
	+ Liver: Pain; jaundice
	+ Kidney: Haemturia
	+ Bowel: Rectal bleeding
	+ Spleen: Pain
* Sx’s of mailignancy:
	+ Fatigue
	+ Loss of appetite
	+ Wasting

***Dx***: Scoring based on the following:

* S-βHCG
* CXR
* CT (brain)
* Abdominal US

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Score** | **0** | **1** | **2** | **4** |
| **Age** | ≤ 39 | > 39 |  |  |
| **Antecedent pregnancy** | Mole | Miscarriage | Term |  |
| **S-βHCG** | <1000 | 1000-10000 | 10000-100000 | >100000 |
| **Interval (months)** | <4 | 4-6 | 7-12 | >12 |
| **Largest tumor (cm)** |  | 3-5 | >5 |  |
| **Site of metastases** |  | Splee/kidney | GIT/liver | Brain |
| **# of metastases** |  | 1-4 | 4-8 | >8 |
| **Prior chemotherapy** |  |  | Single drug | 2/mor drugs |

***Mx:***

1. **Chemotherapy:**
	1. **Low-risk – single drug e.g. Methotrexate/Actinomycin D**
	2. **High-rsik – combination**
2. **Monitor treatment with serial S-βHCG**
3. **Continue treatment until βHCG is normal**
4. **± radiotherapy (cerebral metastases)**
5. **Ø – for defined indications:**
	1. **Removal of a focus of chemoresistant disease**
	2. **Life-threatening haemorrhage**
	3. **Treatment of infection**

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| **Female urinary incontinence:** |

***Definitions:***

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| **Urinary incontinence** | Demonstrable involuntary loss of urine |
| **Continence** | Ability to retain urine in bladder between voluntary episodes of micturition |
| **Residual urine volume** | Amount of urine in bladder after voiding |
| **Detrussor pressure** | Amount of intra-vesicular pressure due to contraction of bladder musculature |
| **Urethral pressure** | Pressure within length of urethra |
| **Urine flow** | Maximal volume of urine passed per unit time (ml/sec) |
| **Bladder compliance** | Change in intra-vesical pressure with change in volume (indicates contractility & suppleness) |
| **Abdominal pressure** | Pressure around bladder due to abdominal effects e.g. musculature/contents (urodynamic studies needed) |
| **Urgency** | Strong & almost unbearable desire to pass urine, accompanied by fear of leaking/pain |
| **Urge incontinence** | Involuntary loss of urine associated with urgency (due to detrussor instability) |
| **Urinary frequency** | Urination at unacceptable short intervals (also seen in UTIx – burns) |
| **Nocturia** | Need to urinate more than twice/night (nocturnal part of urgency) |
| **Stress incontinence** | ↑ Loss of small volumes of urine with ↑ abdominal pressure (bladder neck dislocation/detrussor instability) |

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| **Detrussor instability:** |

***Risk:***

* Older women
* ± Idiopathic
* ± Psychosomatic
* ± Neurological (hyper-reflexive response of UMNL)

***Sx:***

* Polyuria
* Nocturia
* Urgency
* Urge incontinence
* Enuresis
* Dysuria
* Incontinence on sexual intercourse
* ± Stress incontinence

***Dx:***

* Urinalysis
* M, C & S

***Differential Dx:***

* UITIx
* Bladder stone
* Previous radiation
* Hypo-oestrogenism

***Mx:***

1. **Clear explanation & reassurance**
2. **Bladder training:**
	1. **Empty bladder 1st thing in the morning → refrain from passing urine for ½ - 2hr**
	2. **Once the preset goal has been achieved → increase interval in ½ hr to 1hr increments**
3. **Drug enhancement of bladder taining:**
	1. **Imipramine OR**
	2. **Oxybutiline chloride**
4. **Other drugs:**
	1. **Anticholinergics**
	2. **Anti-spasmodics**
	3. **TAD’s**
	4. **Calcium channel blockers**
	5. **Topical or systemic oestrogens (esp. post-menopausal females)**

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| **Stress incontinence:** |

***Note: Commonly found in association with genital prolapse:***

***Ax or contributing factors:***

* Previous NVD’s (esp. multiparous women)
* Menopause/ageing → ↓ urogenital tissue → ↓ intra-urethral tissue
* Obestity/asthma & chronically ↑ intra-abdominal pressure

***Dx:***

* Bonney test positive
* Urinalysis
* M, C & S
* Urodynamic studies (if mixed picture suspected i.e. additional detrussor instability)

***Mx:***

1. **Conservative – if Ø is contra-indicated:**
	1. **Physiotherapy**
	2. **Electrical stimulation Rx &/OR**
	3. **Weighted vaginal cones**
2. **Ø – relapses may occur:**
	1. **Burch colopsuspension**
	2. **Needle-type suspensions**
	3. **Slings (beneath bladder neck)**
	4. **Anterior colporrhapy with special anti-stress incontinence measures (if associated with marked vaginal wall prolapse)**

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| **Overflow incontinence:** |

***Definition***: Leakage of urine in over-distended bladder, with no detrussor instability & no ↑ abdominal pressure:

***Ax:***

* Chronic over-distension → ↑ capacity (≥ 450ml – up to 1000ml can occur) → an a-contractile bladder
* Impaired bladder sensation → over-distension

***Sx:***

* Intermittent wetness not related to a specific event
* Day or night time incontinence
* ± Precipitated by physical activity
* Frequency
* Large residual volume
* UTIx (recurrent)

***Dx:***

* Large over-distended bladder
* Large residual volume after micturition
* Urinalysis
* M, C & S
* Cystoscopy (to rule out intra-vesicular causes of urethral obstruction e.g. tumors

***Mx:***

1. **Medical Mx not very successful**
2. **Surgical reduction of bladder size also show minimal success**
3. **Intermittent self-catheterisation tds**
4. **Oestrogen cream for painful urethral orifice (with catheterization)**

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| **True incontinence:** |

***Note***: Patient always wet due to total loss of continence mechanisms:

***Ax:***

* Congenital abnormalities:
	+ Ureteric duplication with ectopic ureteric orifices
	+ Duplication of ureter systems
	+ Abnormally short urethras
	+ Bladder abnormalities
* Urinary fistulas – due to:
	+ Ø
	+ Trauma
	+ Childbirth
	+ Tumor
	+ Radiation Rx

***Sx***: vagina contains a pool of urine & leakage is continuous

***Mx***: R/F to large centre for Ø repair

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| **Neurologically abnormal bladder:** |

***Ax:***

* Spinal cord injury
* DM
* MS

***Sx:***

* Hyper-reflexic or a-contractile depending on level of injury

***Mx*** – depends on Ax → R/F for Mx:

* Intermittent self-cathterisation
* Ø repair

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| **Climacteric & menopause:** |

***Important effects of oestrogen on genital organs & body - growth:***

|  |  |
| --- | --- |
| **Cervix** | Growth of glandular cells; mucus production |
| **Endometrium** | Growth of endometrial glands & stroma |
| **Vagina** | Thickening of vaginal skin/muscle; ↑ in intra-cellular glycogen (lactobacilliary & pH maintenance) |
| **Myometrium** | Growth of uterine muscle |
| **Breast** | Growth & enlargement after puberty; growth of milk ducts |
| **Bone** | Osteoblastic new bone formation (growth) |
| **Bladder** | Growth of eipethelial cells |
| **Skin** | Stimulation of collagen softening (skin softens) |
| **Liver** | SHBG formation; ↑ clotting factors |
| **Blood lipids** | ↓ LDL; favourable HDL/LDL ratio; protects against coronary hear disease |

***Important effects of progesterone – secretion & stabilization:***

|  |  |
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| **Cervix** | Production of thick viscous mucuc |
| **Endometrium** | ↓ EM gland proliferation; ↑ EM gland secrtetions; EM stabilization (↑ blood flow); ↓ uterine contractility |
| **Breast** | Growth & enlargement during & after puberty; growth of milk glands |
| **Temperature** | Slight ↑ |
| **Respiration** | Hyperventilation especially in pregnancy |
| **Bone** | Imilar to oestrogen |

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| **Oestrogen deficiency:** |

***Sx:***

* Vasomotor
	+ Hot flushes
	+ Night sweats
* Urogenital atrophy
	+ Amenorrhoea
	+ Atrophic vaginitis
	+ Dyspareunia
	+ Breast atrophy
	+ Sterile dysuria-frequency
* Psychologic Sx’s
	+ Anxiety
	+ Irritability
	+ Memory loss
	+ Minor depression
	+ ↓ normal sleep habits
* Other:
	+ ↓ Libido
	+ ↓ Skinturgor

***Cx:***

* Osteoporosis → fractures of vertebral bodies (kyphosis), femur neck & wrists
	+ Risk factors:
		- ♀
		- Post-menopausal & hypo-oestrogenic
		- Positive family Hx
		- Caucasian
		- Thin, physically inactive
		- Smoking
		- Low dietary calcium
		- High dietary phosphate
		- Non-exposure to sunlight (vitamin D deficiency)
* Coronary artery disease
* Alzheimer’s disease

***Dx:***

* Sx’s of menopause
* Amenorrhoea for 6months
* ↑ FSH & ↑ LH

***Contra-indications to oestrogen Rx:***

* Undiagnosed PVB
* Current/recurrent/recent DVT ± PTE
* Current BRCA or ECA
* Current severe liver disease

***Side-effects of oestrogen Rx*** → reduce dose or try another drug:

* Breast tenderness
* Bleeding on oestrogen & progesterone Rx
* Red discolouration of skin, face & palm of hands
1. **HRT if not contra-indicated:**
	1. **Initial dose: Oestradiol valerate 2mg/d; Conjugated oestrogens 0.625mg/d; Micronised oestradiol 50μg/d – preparations include:**
		1. **Oral:**
			* **Sequential Oestrogen + Progesteone: Prempak; Trisequens; Climen → continued menstruation**
			* **Combined oestrogen + progesterone: Kliogest → little bleeding**
			* **Oestrogen only: Premarin; Estrofem (C/I in women with uterus intact is unopposed)**
		2. **Skin patches:**
			* **Estraderm TTS 2x/wk for 3-4d**
			* **Evorel 2x/wk for 3-4d**
		3. **Pellets q3mo – only in patients who have had hysterectomy (estradiol)**
	2. **Vaginal cream/tablet – lower genital tract atrophy:**
2. **Alternatives:**
	1. **Osteoporosis:**
		1. **Bisphosphonates**
		2. **Vitamin-D preparations**
		3. **Calcitonin**
		4. **Fuoride**
	2. **HRT esp. if mastalgia remains a problem:**
		1. **Tibolone (oestrogen analogue)**
	3. **Hotflushes:**
		1. **Clonidine**
		2. **Belladona alkaloids**
	4. **SERM e.g. Raloxifen:**
		1. **No uterine/breast effects**
		2. **No improvement in hot flushes**
		3. **Does prevent osteoporosis & improve blood lipids**
3. **SSRI’s; TAD for depression, where HRT is contr-indicated**
4. **F/U 2 months after starting HRT:**
	1. **Ask about side-effects**
	2. **Ask about tolerance**
5. **Progesterone – no proven added benefit**
6. **Androgens – to ↑ libido (controversial)**
7. **Plan to use HRT for 7-12yr (there is no more advantage after 75yr** of age)

***Mx:***

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| **Genital prolapse:** |

***Types:***

* **Uterine prolapse:**
	+ **Grade I:** Uterus has descended but still within the vagina
	+ **Grade II:** Cervix descends to outside the introitus; body of uterus still in vagina
	+ **Grade III:** Body of uterus also outside vagina
* **Anterior wall prolapse:**
	+ Urethrocele: Prolapsed urethra
	+ Cystocele: Prolapsed posterior bladder wall
* **Posterior wall prolapse:**
	+ Rectocele: Prolapse of anterior rectal wall
	+ Enterocele: Prolapse of pouch of Douglas
* **Vaginal vault prolapse:**
	+ Vault prolapse after hysterectomy:

***Risk factors:***

* Childbirth:
	+ Multipairty
	+ Long labour
	+ Large babies
* Family Hx – not totally predictive
* Hypo-oestrogenism:
	+ Postmenopausal
	+ Puerperal
* Mechanical
	+ Uterine or ovarian masses
	+ Chronic coughing
	+ Obesity
	+ Chronic constipation
* Constitutional – Caucasians

***Sx:***

* Heaviness in pelvis
* Low bachache
* Projection of mass through inroitus
* ± Ulceration of prolapse (severe), due to atrophy & venous congestion
* Cystocele – bladder neck may be dislocated → stress incontinence
* If cystocele is large → urine accumulation in bladder → UTIx, dysuria & frequency
* Difficulty voiding; ± Having lo lift prolapse up to void/pass urine

***Mx:***

1. **Mild: Treat symptomatically**
2. **Moderate/severe – R/F for Ø Rx:**
	1. **Uterine prolapse: Vaginal hysterectomy**
	2. **Cystocele: Anterior repair**
	3. **Rectocele: Posterior repair**
	4. **Enterocele/vault prolapse:**
		1. **Sacrocolpopexy – vault fixed to anterior sacral ligaments**
		2. **Sacrospinous fixation – vault fixed to pelvic sacrospinous ligaments**
	5. **Urinary stress incontinence: See incontinence**
3. **Oestrogen Rx**
4. **Pelvic floor exercises esp. young patients – performed many time a day – “pulling & sucking” anus into abdomen or by simulating anal sphincter pinching action**
5. **Pessaries – plastic rings, which stretch vaginal walls (esp. older patients)**

***Note: Premature menopause = menopause < 35yr, due to 2˚ amenorrhoea e.g. auto-immune diseases → ovarian failure; majority of cases are idiopathic; also require HRT***

***Post-menopausal lifestyle modifications:***

1. **Exercise (weight bearing e.g. walking) – should last ≈ 1hr**
2. **Dietary modifications:**
	1. **↑ Calcium food e.g. leafy green vegetables**
	2. **Calcium supplementation**
3. **Self-care – symptomatic treatment of minor symptoms**
4. **Recognition of dangerous symptoms e.g. PVB**
5. **Sexual function:**
	1. **Lubrication &/or aqueous cream**
	2. **± Androgens**
6. **Psychosocial adaptation:**
	1. **Explanation & reassurance**

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| **Paediatric gynaecology:** |

***Tanner classification of pubertal development:***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Age:** | **Growth:** | **Menstruation:** | **Thelarche:** | **Pubarche:** | **Axillary hair:** |
| **< 10** |  |  | Pre-adolescent: papillae elevated; no breast bud | None |  |
| **10** |  |  | Slight papillae elevation |  |  |
| **11** |  | Elevation of breast & confluent areolae | Sparse; long; slightly pigmented |  |
| **Growth spurt** |
| **12** |  | Darker; coarser; curly | **Axillary hair** |
| **13** | **Menarche** | Areolae & papillae project above breast | Adult type on pubis only |
| **14** | Adult type reaching inner aspects of thigh |
| **15** | Papillae projected & mauture shape |

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| **Vaginal bleeding in children:** |

***Ax:***

* Bacterial vaginitis (most common) due to atrophic vaginal atrophy under the relative hypo-oestrogenicity
* Prolapse of urethral mucosa (blood stained discharge)
* Exogenous estrogen use
* Trauma (bright red blood; may have small quantity)
* Foreign bodies (blood stained discharge)
* Precocious puberty (menstruation)
* Oestrogen producing tumors (menstruation)

***Dx:***

* Obtain specimen for M, C & S
* Examine under GA is tumor suspected

***Mx & Sx:***

1. **Bacterial vaginitis – red & inflamed; usually following a bout of diarrhea:**
	1. **Topical oestrogen cream bd x1wk**
	2. **Broad spectrum antiobiotic syrup**
2. **Prolapsed urethral mucosa – purplish-red sweilling; very sensitive; urethra at centre:**
	1. **Pass transurethral catheter (can be removed after 2-3d)**
	2. **Oestrogen cream 2-3x/d for 2-3wk**
3. **Trauma:**
	1. **Have high index of suspicion for sexual abuse**
	2. **Examine under GA**
	3. **Ø:**
		1. **Wound repair**
		2. **Anus trauma (repair if present)**
	4. **If instrument injury - ↑ risk of perforation → do speculum examination under GA**
		1. **If perforation injury → do laparotomy to exclude internal organ perforation**
		2. **If continuous bleeding PV → laparotomy to exclude internal organ perforation**
	5. **If adequate visualization is inadequate – can use laparoscopy or cystoscope**
4. **Haematomas of vulva:**
	1. **Conservatively:**
		1. **Analgesia**
		2. **Local cold dressings**
	2. **Ligation of bleeding vessels – if haematoma continues to grow**
5. **Exogenous estrogens – still need full examination**

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| **Vaginal discharge in child:** |

***Ax:***

* Foreign bodies
* Atrophic bacterial vaginitis
* Threadworm or pinworm infestation
* Mycotic infestations
* STD’s

***Sx:***

* Burning on micturition

***Dx:***

* Discharge specimen sent for M, C & S
* Stick tape spatula → microscopy examination of worm ova

***Mx:***

1. **Foreign objects – e.g. rolled tissues; stones; paper-clips etc.; foul-smelling discharge**
	1. **Remove using thin surgical forceps**
	2. **If difficult of high up – do under GA**
	3. **Maintain vaginal hygiene**
		1. **No bubble baths**
		2. **Nor strong soaps**
		3. **Wash vulva with gentle soap**
2. **Worm infestations- pruritic; discharge:**
	1. **Paediatric mebendazole**
3. **Sexually transmitted diseases esp Trichomonas – frothy discharge; diagnosed microscopically:**
	1. **Metronidazole**

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| **Labial adhesions:** |

***Ax***: Hypo-pestrogenism

***Sx:***

* Recurrent vulvar irritation
* Dysuria
* Infection

***Mx:***

1. **Oestrogen cream daily x1wk**
2. **Severe adhesions – separate by pulling with thumbs**
3. **If painful → separate under general anaesthesia (as above)**
4. **Maintain normal genital hygiene**

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| **Condylomata acuminata – HPV:** |

***Mx:***

1. **Exclude sexual abuse:**
	1. **Look for other signs of abuse**
	2. **Look for other STD’s**
2. **Ø: Electrocautery under GA**

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| **Additional paediatric problems:** |

***Macroscopic genital abnormalities: R/F for further evaluation***

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| **Precocious puberty:** |

***Definition:*** Development of 2˚ sexual characteristics < 8yr & menstruation < 10yr:

***Classification:***

* GnRH dependent
	+ Idiopathic precocious puberty
	+ Several intracranial lesions
* GnRH independent
	+ Exogenous oestrogen use
	+ Endogenous production of oestrogen by ovarian/adrenal tumors
* Severe thyroid disease
* Partial sexual precocity
	+ Premature thelarche – breast tissue before 8yr
	+ Premature menarche – as for GnRH dependant sexual prococity
	+ Premature pubarche – pubic hair before 8yr

***Cx:***

* Premature closure of growth plates → stunted growth/short stature

***Mx:***

1. **GnRH dependant → R/F**
2. **GnRH independent → R/F to find source of exogenous oestrogen**
3. **Premature thelarche → R/F**
	1. **Reassurance**
4. **Premature menarche → R/F as for GnRH dep. Precocity**
5. **Premature pubarche → R/F to exclude androgen producing tumor**

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| **Delayed puberty:** |

***Definition***: If thelarche hasn’t occurred by 13 & menarche hasn’t occurred by 15.

***Classification:***

* Delayed menarche with adequate 2˚ sexual development
	+ Congenital abnormalities of the genital tract
	+ Androgen insensitivity syndrome
	+ Poor feedback of hypothalamo-pituitary-ovarian axis
* Delayed puberty with inadequate or absent 2˚ sexual characteristics
	+ Hypothalamic or pituitary dysfunction (serious)
	+ Ovarian failure/dysgenesis
* Delayed puberty with virilisation
	+ Adrenal hyperplasia
	+ Androgen producing tumors
	+ Heraphroditism

***Mx***: R/F

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| **Adolescent with excessive uterine bleeding:** |

***Pathogenesis***: Immature HPO axis → anovulatory cycles (≈1-2yr) → irregular cycles, which may be heavy. Other symptoms e.g. pain seldomly present

***Other causes***: Bleeding disorder; genital tumor; pregnancy complications

***Dx:***

* Pregnancy test
* FBC – leukaemia; thrombocytopenia
* ESR
* VWF – Hx of bleeding (dental-work/IJ) since birth

***Mx:***

1. **Exclude serious disease (see above)**
2. **COC – 2 options:**
	1. **Progestogen dominant pill**
		1. **Nordette – 150μg of levo-neorgestrel x3-4mo**
		2. **Femodene/Minulette – 75μg gestodene x3-4mon**
	2. **MPA 5mg 1-2x/d x14d, repeated on same calendar days each month for 3-4mo**
3. **Reassess after 3-4months i.e. discontinue drugs as see if cycle has become more regular**
4. **Menstural diary**
5. **If tumor is suspected → R/F for examination under GA & special investigations**

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| **Gynaecological tumors in children:** |

***Mx***: R/F

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| **Ovarian tumors:** |

***Types:***

* Older children: Germ-cell tumors
* Young children/adults: Benign cystic teratoma:
	+ Growing cystic abdominal mass → ± torsion; ± rupture; ± bleed
	+ All complications will cause much pain & shock
* Precocious puberty: Granulosa cell tumors
* Androgen producing tumors

***Mx***: R/F

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| **Contraception:** |

***Pearl index = 100 x 12 x (# of pregnancy)/Total number of months in use***

***Classification:***

* **Highly reliable:**
	+ Tubal ligation
	+ Vasectomy
	+ Depomedroxyprogesterone acetate injections (Depo-provera)
	+ IUCD
* **Very reliable:**
	+ COC
	+ Deponorethisterone oenanthate injections (Nur-isterate)
* **Reliable:**
	+ Progestogen only pill
	+ Male or female condome with spermacides
* **Unreliable:**
	+ Conventional methods of contraception

***Oral contraception*** – 2 options: POP’s vs. COC’s

* **COC’s** – Combined oral contraception: Oestrogen (E) & Progestogen (P) in each pill:
	+ **Monophasic** – E & P in every tab.
		- **Gonane** containing preparations:
			* High dose oestrogen: Abnormal uterine bleeding & emergency contraception
				+ Ovral – Ethinyl oestradiol (EE) 50μg & Norgestrel (NG) 500μg
				+ Nordiol – EE 50μg & Levo-NG 250μg
			* Low dose oestrogen: Cycle control – good 1st choice
				+ Nordette – EE 30μg & Levo NG 150μg
			* 3rd Generation gonane low dose: Androgenically neutral
				+ Femodene – EE 30μg & gestodene 75μg
				+ Minulette – as for femodene
			* 3rd Generation gonane very low dose: To be take at same time each day ELSE ineffective in FSH suppression
				+ Melodene – EE 20μg & gestodene 75μg
				+ Marvelon – EE 30μg & desogetrel 150μg (oestrogenicity)
				+ Mercillon – EE 20μg & desogestrel 150μg
		- **Pregnane** preparations:
			* Diane-35 – EE 35μg & cyproterone acetate 2mg (oestrogenic anti-androgen) used for acne & hirsutism
	+ **Biphasic** – E constant in all 21 tab., low P in the 1st 11 and higher dose in remaining 10
		- **Gonane** preparations:
			* Biphasil/Nomovlar – for people needing some oestrogenicity:
				+ 11 Tab. – EE 50μg & Levo-NG 50μg
				+ 10 Tab. – EE 50μg & Levo-NG 125μg
	+ **Triphasic** – Varying E concentrations & increasing P concentrations
		- **Triphasil**/Logynon-ED – good cycle control:
			* 6 Tab. EE 30μg & L-NG 50μg
			* 5 Tab. EE 40μg & L-NG 75μg
			* 10 Tab. EE 30μg & L-NG 125μg
		- **Triodene**/Tri-minulette – good first choice; good cycle control:
			* 6 Tab. EE 30μg & gestodene 50μg
			* 5 Tab. EE 40μg & gestodene 70μg
			* 10 Tab. EE 30μg & gestodene 100μg
* **POP’s** – Progestogen only pill: Progestogen dose fixed in each pill
	+ Exluton – Lyno-estrenol 550μg
	+ Femulen – Ethyndiol diacetate 500μg
	+ Micro-novum – Norethisterone 350μg
	+ Microval – Levo-norgestrel 30μg

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| **COC:** |

***Mechanism of action:*** COC → Constant GnRH stimulation → FSH suppression → No FSH peak → impaired follicle development & anovulation. Mid-cycle LH peak also absent.

***Advantages vs. disadvantages of COC:***

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| **Advantages** | **Diadvantages – can cause morbidity in diseased patients** |
| Programmed menstruation | ↑ Clotting factors |
| ↓ Menstrual loss and other Sx’s | ↑ LDL (progestogens) |
| ↓ Incidence of benign breast disease & ovarian cysts | ↑ RAAS (oestrogen) |
| ↓ Incidence of acne & anaemia | ↑ BP |
| Some protection against tichomonas & other upper genital tract infections | Glucose intolerance |
| Protection against development of ovarian & endometrial CA |  |

***Group selection:*** 1st line drug for most first-time contraceptive users

***Contraindicated groups:***

* **Absolute:**
	+ Pregnancy
	+ Undiagnosed vaginal bleeding at any age
	+ ≥ 35yr + smoke + DM, hypercholesterolaemia or gross obesity
	+ Hx of IHD, CVA, or arterial &/or venous thrombosis
	+ Severe untreated HT
	+ Focal migraine
	+ Heart valve lesions
	+ Hepatitis, Hx of cholestatic jaundice of pregnancy, or gall-bladder disease
	+ Current breast or endometrial CA
* **Relative:**
	+ DM
	+ Epilepsy
	+ Intestinal malabsorption syndrome
	+ Major depression
	+ Chronic renal or hepatic disease
	+ Planned major surgery with immobilization
	+ Possible porphyria

***S/E’s of COC:***

* **Intermenstrual bleeding:**
	+ If in 1st half of cycle = endometrium doesn’t proliferate enough & break down → add oestrogen
	+ If in 2nd half of cycle/menstrual blood is ↑↑ = progestogen deficiency → add progestogen
	+ Total loss of cycle control → temporary Nordiol for 3-4months → back on COC’s
* **Headaches:**
	+ If during placebo pill = oestrogen deficiency/withdrawal → monophasic balanced preparation used continuously (without placebos) for 4 packets → reduces headache incidence to 3-4x/yr
	+ If during last part of cycle → triphasic pill (simulates normal cycle)
* **Post-pill amenorrhoea** (rarely occurs for more than 2-3months):
	+ Reassure patient
	+ If more than 6 months = PATHOLOGICAL!!! → work-up as for 2˚ amenorrhoea
* **Progestogenic S/E:**
	+ Acne
	+ Weight gain (1-2kg)
	+ Irritability
	+ Fatigue
	+ Sexual arousal phase dysfunction
	+ Depression
* **Oestrogenic S/E:**
	+ Chloasma
	+ Mastalgia
	+ ↑ Vulvobaginal candida incidence
	+ ± Nausea

***Maintenance of amenorrhoea***: Use continuous monophasic preparations without placebos; if currently on triphasic COC’s use only last 10 active pills of monophasic preparation after completion of current packet (less effective)

***Forgetting pills***: A missed pill might allow a dominant follicle to develop since its suppressive effect is no longer present. If a dominant follicle develops, the risk of ovulation ↑. The following regime can be used to minimize this risk with missed pills:

1. **If 1 missed: Take A.S.A.P. i.e. as oon as remembered**
2. **If only discovered next day: Take 2**
3. **If 2 days’ pills missed: 2 pills on each of next 2 days (only maintains cycle control NOT CONTRACEPTION); use condoms as well (for 1 month)**
4. **If 3 days’ pills missed: Discard current pack & start new pack + condoms (for 1 month)**

***Complications of COC’s:***

* Gestodene & desogestrel: ↑ Risk of throbo-embolism & stroke – increased risk in the following patients:
	+ AT III deficiency; Protein C & S deficiency; Activated protein C resistance; Lupus anti-coagulant; Anticardiolipn antibody syndrome; Factor V Leiden mutation
* ≥ 35yr + smoke + heart/vascular disease have ↑ risk of thrombo-embolism
* Drug-interactions – oestrogen induces hepatic microsomal enzymes:
	+ Anti-convulsants e.g. phenytoin; barbiturates; carbamazepine; ethsuxamide; primidone
	+ Rifampicin & griseofulvin
	+ Spironolactone
	+ Chlorpromazine & chloral hydrate

***Mx*** – choice of COC’s:

1. **Individual needs of patient – used for 3-4months before final assessment of acceptability/Side effects made**
2. **Start with monphasic/triphasic:**
	1. **Triphasic – better cycle control**
	2. **Modern monophasic – new low dose BUT high potency progestogens had excellent cycle control**
3. **S/E may indicate a progestogen (P) excess with oestrogen (E) deficiency or vice verse:**
	1. **↑ P but ↓ E – Consider more oestrogenic preparations e.g. Marvellon (biphasic)**
		1. **↑ Appetite**
		2. **Acne**
		3. **Vaginal dryness**
		4. **Shortened menstruation OR**
		5. **Amenorrhoea**
		6. **Irritability**
		7. **Mood swaings**
		8. **Depression**
		9. **Headaches during placebo tablets**
	2. **↑ E but ↓ P – Consider more progestogenic preparation e.g. Nordette; Triphasil; Logynon-ED:**
		1. **Excessive menstruation**
		2. **Breakthrough bleeds**
		3. **Mastalgia**
		4. **Headaches during active pills**
		5. **Leucorrhoea**
		6. **Corneal oedema**
4. **BEFORE CHANGING COC’S → FINISH CURRENT PACKET**

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| **POP:** |

***Important considerations:***

* Less effective than COC’s
* Work by thickening cervical → unfavourable implantation conditions for blastocyst in endometrium
* Reliable during lactation & puerperium
* S/E’s – rarely encountered:
	+ Irregular menstruation
	+ ± Weight gain
	+ Headaches
	+ ↓ Libido

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| **Injectable contraception:** |

***Types:***

* Depo-medroxyprogesterone acetate 150mg/ml IMI q90d(Depo-provera)
* Depo-northisterone oenanthate 200mg/ml IMI q60d (Nur-isterate)

***Mechanism***: Inhibits FSH & LH → Endometrium becomes thin & cervical mucus thick; ↓ motility of fallopian tubes

***Group selection:*** Women planning long-term pregnancy postponement

***Contra-indicated groups:***

* Pregnancy
* Undiagnosed PVB
* Uncontrolled HHT
* Major depression
* Focal migraine
* Chronic hepatitis
* Porphyria

***S/E profile:***

* Amenorrhoea
* Slight, irregular PVB
* Severe bleeding in some users – Mx as follows:
	+ Oestrogen dominant COC for 1 month e.g. Biphasil OR
	+ Conjugated oestrogen 0.625-1.25mg/d until 1 week after bleeding stops OR
	+ Repeat DMPA 150mg (only useful if near next IJ date)
* Weight gain of 5kg
* Progestogenic S/E’s – Vaginal dryness; dyspareunia; headaches; minor depression; ↓ libido

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| **Implantable contraception:** |

***Method***: 6 x 34mm x 2.4mm silastic norgestrel rods are implanted SC → 5yr contraception

***Mechanism***: As with injectables

***S/E profile:*** Progestogenic:

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| **Intra-uterine contraceptive device:** |

***Types:***

* Polyethylene base with copper wire coil:
	+ Multiload
	+ Nova-T
	+ Copper T Slimline (copper on arms as well)
* Medicated IUCD – progestogen in the stem: Has good cycle control
	+ Mirena
* Inert plastic or polyethylene IUCD e.g. Lippes Loop (now obsolete)

***Mechanism*** – 4 way:

* Stimulate foreign body reaction → phagocytosis of sperm/blastocyst.
* Copper ions are also spermotoxic.
* Induces dicidual changes → unfavourable for implantation
* Thickening of cervical mucus → impenetrable for sperm

***Selection group:***

* Forgetful pill users OR steroid intolerance
* Completed families but don’t wish to have tubal ligation

***Advantages:***

* No systemic effects
* No coital interference
* Long action
* Secrecy of contraception

***Contra-indications:***

* Absolute:
	+ Pregnancy
	+ Undiagnosed abnormal uterine bleeding
	+ Pelvic infection
	+ Previous ectopic pregnancy
	+ HIV infected women
* Relative:
	+ If at risk for bacteraemia e.g. heart valve patients
	+ Uterine abnormalities
	+ Sever dysmenorrhoea
	+ After septic abortion
	+ After 2/more previous IUCD expulsions

***S/E profile:***

* Bleeding after insertion – common but mild
* ↑ Menstrual bleeding – if severe:
	+ Remove IUCD
	+ Prostaglandin inhibitors (Ibuprofen/Mefanamic acid) OR
	+ Tranexamic acid
* Pain after insertion
* Aggravated dysmenorrhoe → may need prostaglanding inhibitors

***Cx:***

* PID
* Perforation of uterus at insertion
	+ 2˚ Cx:
		- Pain
		- Adhesions
		- Injury to intestines/bladder
		- ↓ Copntraception
* Pregnancy:
	+ Ectopic OR
	+ Intruterine → if so & strings are visible → remove IUCD (halves risk for spontaneous abortion)

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| **Barrier contraception:** |

***Types:***

* Condoms
* Cervical diaphragm (female) – fitted prior to coitus + spermacides & left in for 8hr after intercourse
* Female condoms

***Spermacides***: Currently doubling-up as lubricant: I call it spermolube = Nonoxynol-9/Nonoxynol-11 (9-11)

***Important considerations:***

* STD & pregnancy protection – although not as effective in preventing pregnancy as IUCD or IJ
* Can break!!!

***Selection group:***

* Infrequent/unplanned intercourse or when other methods e.g. COC’s not available
* Remember – No COC’s then no COCKS, unless plastic socks!!!
* If ↑ risk for STD’s
* Short term contraception needed e.g. missed pill

***S/E profile:***

* Contact dermatitis – needs change in contraception
* Psychological “obstructed” intimacy feelings
* Interactions with some lubricants → weakening → ↑ rupture rate
* Latex allergies!!!

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| Emergency post-coital contraception – Oops I did it again!! |

***Types:***

* Ethinyl oetradiol 100μg & Norgestrel 25-50μg x2 (i.e. 2 tab. within 72hr of intercourse followed by another 2 tab. 12hr later) e.g. Ovral & E-Gen-C
* Insert IUCD up to 5d after earliest estimate of ovulation BUT not more than 7d after intercourse
* Microval - 25 Mini-pills x2 12hr apart
* High dose Oestrogens e.g Premarin for 5d after intercourse

***S/E profile & Mx:***

* N&V
	+ Mx: Anti-emetics
* Insertional pain & slight PVB with IUCD (temporary)

Contra-indication: Pregnancy – IT’S A WASTE!!

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| **Male & female sterilization – the great snip & tie:** |

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| **Female sterilization by tubal ligation:** |

***Selection criteria:***

* Mature & autonomous (can make an informed decision)
* If not capable of the above, a request fro sterilization has to be made to the minister of health (e.g. mentral retardation)
* Informed of options
* Decision must be unhurried
* Postponed if:
	+ Divorce
	+ At time of delivery
	+ Had a miscarriage
	+ Young
* No gynaecological problems i.e. normal menstruation; not pregnant; normal cervical cytology

***Types*** – 2 common types:

* Laparoscopic using clips (filshie clips) or silastic rubber band (Fallope rings) – if not pregnant; under GA/local anaesthesia
* Modified Parkland – under GA/epidural anaesthesia; using polyglactin/polyglycolic sute material to tie tube off:
	+ At C/S OR
	+ D­1/D2 of puerperium (4-5cm subumbilical transverse incision) OR
	+ Interval procedure – if laparoscopic equipment & expertise aren’t available (6-8cm suprapubic transverse incision)

***Cx:***

* Anaesthetic risks; laparoscopic risks; slight haemorrhage; wound Ix
* Failure to ligate tube
* Ectopic pregnancy
* Post-tubal ligation syndrome – excessive abnormal uterine bledding, pain & dysmenorrhoea (Ax unknown)
* Failure rate due to – improper tube identification; incomplete ligation/occlusion; reanastamosis (RARE!)

***Reversal*** – possible if tubes were ligated & not cauterized/buried & if long enough wide-lumen sections are available; absence of adhesions. Success achieved in 2/3 of patients

***Mechanism*** – performed with microscope

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| **Male sterilization by vasectomy:** |

***Selection group:***

* Voluntary
* Men with hereditary disease in their side of family

***Note: Not advised to have vasectomy are men in unstable relationships; under financial or social pressure***

***Important considerations:***

* Man/couple must use contraception for 12wk after procedure
* After 12wk semen analysis should be preformed
	+ When 2 analyses show azoospermia (no sperm) = SUCCESS
	+ If persistent sperm → R/F urologist

***Cx:***

* Recanalisation (small risk)
* Circulating anti-sperm anti-bodies → decreased successful reversal even if perfectly re-anastamosed
* Spermatogenesis can continue for years after procedure

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| **Rape & battering:** |

**Forensic examination – patient to report to police first to lay a charge, whereupon she should receive a “rape-kit” & be accompanied to the medical officer for evaluation → he must follow the instruction as stipulated in the J88 & SAP308 documents. He must make a copy, keep 1 and return the other to the investigating officer. Remember to sign all pages as indicated.**

***Mx:***

1. **Thorough medico-legal Hx & Ex**
2. **Complete J88 & SAP308 forms**
3. **Collect evidence in specially designed “rape-kit” incl. clothes, shoes, underwear etc.**
4. **Rx injuries appropriately**
5. **Prevent pregnancy by emergency contraception – do pregnancy test**
6. **Prevent STD’s – do RPR & HIV VCT:**
	1. **Doxycycline 100mg bd PO x10d**
	2. **Metronidazole 2g PO STAT**
	3. **Ciprofloxacin 500mg PO STAT**
	4. **AZT & 3TC anti-retroviral post-exposure prophylaxis**
7. **Symptomatic Rx – for the following:**
	1. **Physical symptoms:**
		1. **Muscle cramps**
		2. **N&V**
		3. **Stomach pains**
		4. **Eating & sleeping disorders**
		5. **Headaches**
		6. **Vaginal discharge**
		7. **Itching**
		8. **Burning sensation of micturition**
		9. **Generalized pain & agitation**
	2. **Psychological symptoms:**
		1. **Rape trauma syndrome – PTSD**
			* **Fears of:**
				+ **Injury**
				+ **Death**
				+ **Mutilation & poor self-image**
			* **Feelings of:**
				+ **Humiliation**
				+ **Degradation**
				+ **Helplessness**
				+ **Anxiety**
				+ **Guilt**
				+ **Shame**
				+ **Embarrassment**
				+ **Self-blame**
				+ **Anger**
				+ **Irritation**
				+ **Hate**
				+ **Disbelief & denial**
				+ **Revenge**
			* **Mood swings**
			* **Poor concentration**
			* **Depression**
			* **Phobias**
			* **Blocking of thoughts**
8. **Proper F/U examination at 3-10d for detection of disease & assessment of management & patient well-being**
9. **Repeat F/U at 6-8wk for RPR; HIV VCT & pregnancy testing**
10. **If patient becomes pregnancy she should be counseled for TOP or R/F for TOP**
11. **Needs of rape victim:**
	1. **Information – what to do; where to go after rape (medical; mental; health; social; legal)**
	2. **Immediate & F/U medical care as stipulated above**
	3. **Immediate & F/U professional counseling for emotional trauma/consequent social disruption (debriefing)**
	4. **Skilled, sensitive treatment by police, social workers, nurses, physicians, lawyers & others who may question/treat victim**
	5. **Support form significant others – friends, family, spiritual leaders etc.**
	6. **Legal assistance incl. information about rights, advocacy, representation in criminal-justice system**