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| **Drug** | **Examples** | **Mechanism** | **Uses** | **Side Effects** |
|  | Leuprolide | **GnRH analog**  **Agonist when pulsatile**  **Antagonist when continuous** | **Pulsatile:**  -Infertility  **Continuous:**  -Uterine fibroids  -Precocious puberty  -Endometriosis  -Prostate cancer |  |
| **Estrogens** | Ethinyl estradiol  DES  Mestranol | Estrogen agonists | **Hypogonadism**  **Ovarian failure**  Menstrual abnormalities  **HRT** (post menopause)  Prostate cancer | **Endometrial cancer**  Bleeding  Clear cell carcinoma  (DES in utero)  **Incr. thrombus risk**  Contraind.: DVT, ER+ breast cancer |
| **Selective Estrogen**  **Receptor Modulators** | Clomiphene | Estrogen antagonist  (hypothalamus)  **Prevent feedback inhibition**  Incr. LH, FSH | **Treat infertility**  (anovulation) | Hot flashes  Ovarian enlargement  **Multiple simultaneous pregnancies**  **Visual disturbances** |
| Tamoxifen | **Antagonist at breast**  **Agonist at bone, uterus** | ER/PR + breast cancer | **Incr. risk thromboembolus**  **Incr. risk endometrial cancer** |
| Raloxifene | **Antagonist at breast, uterus**  **Agonist at bone** | **Osteoporosis** | **Incr. risk thromboembolus**  No incr. risk endometrial cancer |
| **Aromatase inhibitors** | Anastrozole  Letrozole  Exemestane | **Inhibit peripheral conversion**  Androgens to estrogen | ER + breast cancer  (postmenopausal) |  |
| **Progestins** | Levonorgestrel  Medroxyprogesterone  Etonogestrel  Norethindrone  Megestrol | Progesterone agonists  **Decr. endometrial growth**  Incr. endometrial vascularity  Thicken cervical mucus | **Contraception**  Endometrial cancer  Abnormal uterine bleeding  **Progestin challenge** |  |
| **Antiprogestins** | Mifepristone  Ulipristal | Competitive progestin inhibitor | **Pregnancy termination**  **Emergency contraceptive** |  |
| **Copper IUD** |  | **Local inflammation**  **Toxic to sperm/ova**  Prevent fertilization/ovulation | **Long acting reversible contraceptive**  Effective emergency contraceptive | Heavier/longer menses  **Dysmenorrhea**  **Risk of PID** |
| **B2 agonists** | Terbutaline  Ritodrine | **Tocolysis** (uterine relaxation) | Decr. contraction frequency |  |
| **Danazol** | | **Synthetic androgen**  Partial agonist | **Endometriosis**  **Hereditary angioedema** | Weight gain, edema  **Acne, hirsutism**  Decr. HDL, **hepatotoxicity** |

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| **Teratogen** | **Effects** |
| **ACE inhibitors** | Renal damage |
| **Alkylating agents** | Loss of digits |
| **Aminoglycosides** | Ototoxicity |
| **Antiepilectics** | Neural tube defects  Cardiac defects  Cleft palate  Skeletal abnormalities  Give folate supplements |
| **DES** | Vaginal clear cell adenocarcinoma  Mullerian anomalies |
| **Folate antagonists** | Neural tube defects |
| **Isotretinoin** | Severe birth defects |
| **Lithium** | Ebstein anomaly  (apical tricuspid valve displacement) |
| **Methimazole** | Aplasia cutis congenital |
| **Tetracyclines** | Discolored teeth  Bone growth inhibition |
| **Thalidomide** | Phocomelia (flipper limbs) |
| **Warfarin** | Hemorrhage, abortion  Bone deformities  Ophthalmologic anomalies |

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| **Teratogen** | **Effects** |
| **Alcohol** | Failure of cell migration  Fetal alcohol syndrome  (microcephaly, facial abnormalities) |
| **Cocaine** | Low birth weight, IUGR  Preterm birth  Placental abruption |
| **Smoking** | Low birth weight, IUGR, SIDS  Preterm labor  Placental problems |
| **Lack of iodine** | Congenital goiter  Congenital hypothyroidism |
| **Diabetes** | Caudal regression syndrome  Congenital heart defects  Neural tube defects  Macrosomia |
| **Methyl mercury** | Neurotoxicity |
| **X-rays** | Microcephaly  Intellectual disability |

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| **Error** | **Description** |
| **Agenesis** | **Absent primordial tissue**  Absent organ |
| **Aplasia** | **Present primordial tissue**  Absent organ |
| **Hypoplasia** | Present primordial tissue  **Incomplete organ development** |
| **Disruption** | Previously normal tissue  **2O breakdown** |
| **Deformation** | **Extrinsic disruption**  **After** embryonic period |
| **Malformation** | **Intrinsic disruption**  **During** embryonic period |
| **Sequence** | **1O event causes abnormalities** |