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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 estradiolDESMestranol | Estrogen agonists | **Hypogonadism****Ovarian failure**Menstrual abnormalities**HRT** (post menopause)Prostate cancer | **Endometrial cancer**BleedingClear 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 flashesOvarian 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** | AnastrozoleLetrozoleExemestane | **Inhibit peripheral conversion**Androgens to estrogen | ER + breast cancer(postmenopausal) |  |
| **Progestins** | LevonorgestrelMedroxyprogesteroneEtonogestrelNorethindroneMegestrol | Progesterone agonists**Decr. endometrial growth**Incr. endometrial vascularityThicken cervical mucus | **Contraception**Endometrial cancerAbnormal uterine bleeding**Progestin challenge** |  |
| **Antiprogestins** | MifepristoneUlipristal | 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** | TerbutalineRitodrine | **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 defectsCardiac defectsCleft palateSkeletal abnormalitiesGive folate supplements |
| **DES** | Vaginal clear cell adenocarcinomaMullerian anomalies |
| **Folate antagonists** | Neural tube defects |
| **Isotretinoin** | Severe birth defects |
| **Lithium** | Ebstein anomaly(apical tricuspid valve displacement) |
| **Methimazole** | Aplasia cutis congenital |
| **Tetracyclines** | Discolored teethBone growth inhibition |
| **Thalidomide** | Phocomelia (flipper limbs) |
| **Warfarin** | Hemorrhage, abortionBone deformitiesOphthalmologic anomalies |

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| **Teratogen** | **Effects** |
| **Alcohol** | Failure of cell migrationFetal alcohol syndrome(microcephaly, facial abnormalities) |
| **Cocaine** | Low birth weight, IUGRPreterm birthPlacental abruption |
| **Smoking** | Low birth weight, IUGR, SIDSPreterm laborPlacental problems |
| **Lack of iodine** | Congenital goiterCongenital hypothyroidism |
| **Diabetes** | Caudal regression syndromeCongenital heart defectsNeural tube defectsMacrosomia |
| **Methyl mercury** | Neurotoxicity |
| **X-rays** | MicrocephalyIntellectual 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** |