Achievable

USMLE STEP 1 DUMP SHEET

Cancer, endocrine, lung, GI drugs

Chemotherapy

Drugs	Mechanism	Key toxicity
Cyclophosphamide, ifosfamide	Alkylate DNA; any cycle phase	Hemorrhagic cystitis (acrolein; mesna), SIADH
Cisplatin, carboplatin	Platinum cross-links	Nephrotoxicity (amifostine), ototoxicity, neuropathy
Busulfan	Alkylating	Pulmonary fibrosis, skin pigmentation
Methotrexate	Dihydrofolate reductase; S phase	Mucositis, liver and lung fibrosis; leucovorin rescue
5-Fluorouracil	Thymidylate synthase	Myelosuppression, diarrhea, mucositis
6-Mercaptopurine	Activated by HGPRT	Myelosuppression; xanthine oxidase clears it
Vincristine, vinblastine	Block microtubule assembly; M phase	Peripheral neuropathy, myelosuppression
Paclitaxel, docetaxel	Stabilize microtubules; M phase	Neuropathy, neutropenia, hypersensitivity
Irinotecan, topotecan; etoposide	Topoisomerase I; topoisomerase II	Irinotecan: diarrhea
Doxorubicin, daunorubicin	Intercalate DNA	Dilated cardiomyopathy (dexrazoxane)
Bleomycin	Antitumor antibiotic	Pulmonary fibrosis, skin changes

Targeted therapy

- **Imatinib, dasatinib:** BCR-ABL; CML, GIST
- **Erlotinib:** EGFR. **Crizotinib:** ALK (lung)
- **Rituximab:** CD20. **Trastuzumab:** HER2
- **Nivolumab, pembrolizumab:** PD-1 on T cells
- **Ipilimumab:** CTLA-4. **Bortezomib:** proteasome
- **ATRA:** APL. **Asparaginase:** ALL; pancreatitis

Hormonal therapy

- **Tamoxifen:** breast antagonist, endometrial agonist: endometrial cancer, VTE
- **Raloxifene:** no endometrial effect. **Fulvestrant:** ER degrader
- **Anastrozole, letrozole:** aromatase; bone loss
- **Leuprolide:** GnRH agonist, initial flare. **Flutamide:** AR blocker
- **Tumor lysis:** high urate, K, phosphate; low Ca. Rasburicase

Diabetes drugs

Drugs	Mechanism	Adverse effects
Metformin	Less hepatic gluconeogenesis	Lactic acidosis, B12 deficiency, GI; no hypoglycemia
Glyburide, glipizide	Close β-cell K-ATP channels	Hypoglycemia, weight gain; need working β cells
Pioglitazone	PPAR-γ: insulin sensitivity	Weight gain, edema, heart failure, fractures
Liraglutide, semaglutide	GLP-1 agonists	Weight loss, pancreatitis; medullary thyroid cancer
Sitagliptin	DPP-4 inhibitor	Pancreatitis, nasopharyngitis
Empagliflozin, dapagliflozin	SGLT2: glucose lost in urine	UTI, genital infections, DKA, dehydration
Acarbose	Brush-border α-glucosidase	Flatulence, diarrhea

- **Insulin:** rapid lispro, aspart (onset under 30 min); regular (IV use); NPH (protamine); glargine 24 h, degludec 42 h

Asthma drugs

- **Albuterol; salmeterol:** β2, more cAMP; tremor
- **Inhaled steroids:** oral candidiasis
- **Montelukast:** leukotriene receptors; Churg-Strauss
- **Theophylline:** PDE; narrow index, seizures
- **Tiotropium:** antimuscarinic. **Omalizumab:** anti-IgE

GI drugs

- **PPIs:** C. difficile, fractures, low Mg; less clopidogrel
- **Cimetidine:** CYP450 inhibitor, gynecomastia
- **H. pylori:** bismuth quadruple therapy first line; PPI, clarithromycin, amoxicillin if susceptible
- **C. difficile:** oral vancomycin or fidaxomicin
- **Misoprostol:** prevents NSAID ulcers