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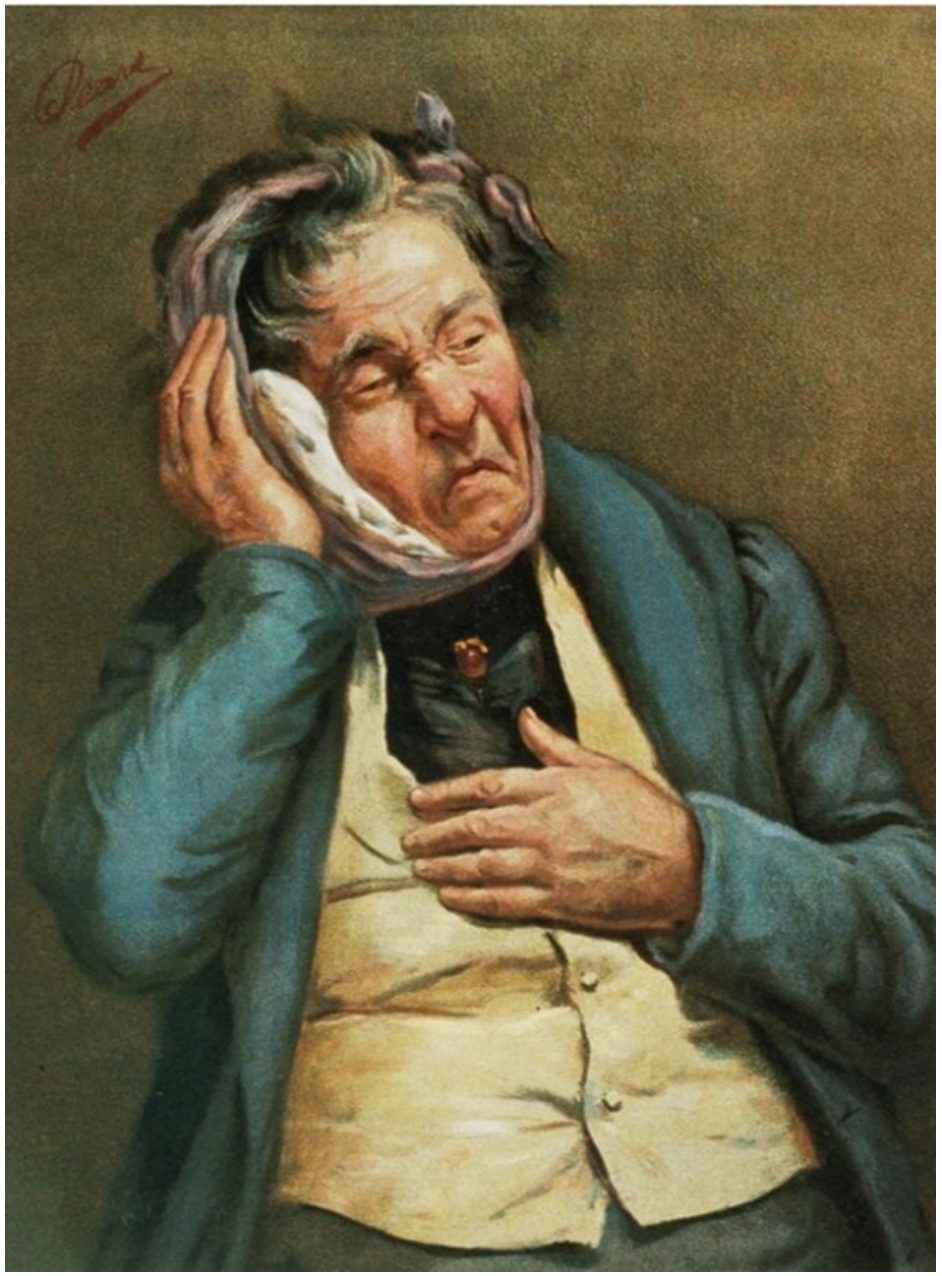

Clinical Trials 2010-1

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| Question 5:<br><br>Evaluation of drugs and clinical trials<br><br>Katzung 68-73 | 1. During clinical drug trials, what factors might confound the results?<br><br>*What are some of the host factors?*<br>*What are some of the observer factors?*<br>*Why do you blind trials?*<br><br>2. What can be done to minimise the confounders? | 1. variable natural history of most diseases<br>2. presence of other diseases and risk factors<br>3. subject and observer bias<br><br>1. large populations over sufficient time; cross-over trials<br>2. exclusion criteria; randomisation; cross-overs<br>3. placebo controls; blinding; cross-overs | Bias<br><br>Bonus points for comment |

Erythropoeitin 2007-1

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| 1.5 Erythropoeitin | What is erythropoietin | - **Glycoprotein produced by kidney** | |
| | What are its clinical applications? | - **Stimulates red cell precursors to proliferate and differentiate.** Also releases reticulocytes from marrow<br>- Main use is for the **anaemia of chronic renal failure**, where erythropoietin production in impaired<br>- Helps some **marrow failure** states (aplastic anaemia, myeloproliferative/myelodysplastic disorders, multiple myeloma, AIDS and cancer)<br>**(must get one of three)** | |
| | What toxic effects may occur? | - Toxicity mainly related to rapid Hb rise<br>o Hypertension<br>o Thrombosis<br>**(must get one of two)**<br>(Allergic reactions are infrequent and mild) | /2 |

Over the Counter Preparations 2007-2

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| 1.5 OTT (AS) | Name some of the ingredients in over-the-counter preparations that may cause toxicity (3 of 7 to pass) | 1 ethanol<br>2 antihistamines<br>3 salicylates<br>4 caffeine<br>5 local anaesthetics<br>6 sodium<br>7 sympathomimetics | |
| | Give one example | 1 sympathomimetics and Type-1 DM, HT, asthma, hypothyroidism<br>2 salicylates and children (Reye's syndrome), PUD, coagulopathies<br>3 antihistamines, ethanol and drowsiness<br>4 sympathomimetics and caffeine and agitation, headaches, interstitial nephritis<br>5 drug interactions | |

Penicillamine 2007-2

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| 2.5<br>Penicillamine<br>(MS) | What are the therapeutic uses of Penicillamine (2)<br><br>List the adverse effects of D-Penicillamine (occur in up to 1/3 of patients) (2). | • Wilsons disease<br>• Copper poisoning<br>• Severe rheumatoid arthritis (occasionally)<br><br>• Nausea and Vomiting<br>• Nephrotic Syndrome<br>• Hypersensitivity ( avoid if history of penicillin allergy)<br>• Pancytopaenia<br>• Pemphigus<br>• Myasthenia<br>• Optic atrophy<br>• Arthropathy | /2 |

Phases of Drug Testing 2004-2

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| Evaluation of new drugs | Describe the phases of testing of a new drug<br><br>Please describe ways in which new drugs might be discovered or produced | In vitro/animal, human phases 1-4<br><br>2 of chemical modification, random screening, rational design, gene methods, new drug target identification | |

St John's Wort 2006-2

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| 5.<br>St John's Wort | **What are the medical uses for St Johns Wort?**<br><br>**What are its important drug interactions?** | **Depression**<br><br>**Kinetic - CYP inducer (decrease drug effect)**<br>**Dynamic – inhibits catechol reuptake (potentiates some drug effects)** | |

Topical Eye Medications 2010-2

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| 5.<br>a. List the advantages of eye ointments over eye drops. | More stable<br>Less absorption into lacrimal ducts<br>Longer retention time on conjunctival surface<br>Safer with potent drugs<br>Ointment bases provide protection and comfort at night | 2 to pass |
| b. List by action the types of drugs used topically in the eye | Mydriatics<br>Miotics<br>Cycloplegics<br>Decongestants<br>Antibiotics<br>Antivirals<br>Antiseptics<br>Corticosteroids<br>Local anaesthetics<br>Stains eg. Fluoroscein | 4 to pass |
| c. List the ideal properties of an ocular local anaesthetic | Quick onset of action ( 10-20 secs. )<br>Useful duration of action ( 10-20 mins )<br>No obvious effects on function or healing<br>No interactions with drugs used concurrently | Quick onset and useful duration of action |

Vitamin K 2015-2-A

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| **Stem:** Moving onto Pharmacology. It is decided to reverse his anticoagulation and Vitamin K is administered. | | | |
| **Question 4**<br>Vitamin K and warfarin<br>**Subject:** Pharm<br>LOA: 2 and 1 | 1. What is vitamin K? | **Fat-soluble substance** in leafy vegetables; **usually synthesised by gut bacteria**. Vit K1(food) & K2(bact) | Q4.1 Bold to pass |
| | 2. Please describe its mechanism of action in reversal of warfarin anticoagulation<br><br>Prompt: How long does it take for the onset of action | **Warfarin** – coumarin anticoagulant, prevents reductive metabolism of inactive vit K to active form so produces **biologically inactive** VII, IX, X, prothrombin, protein C&S<br>**Vit K1 confers biologic activity** upon prothrombin and factors VII, IX, X by participating in their postribosomal modification.<br>**Onset of action 6 hours**, complete by 24 hours | Q4.2 to pass need concept of warfarin producing biologically inactive factors, vit K overcoming this, & delayed onset of action |

Vitamin K 2014-1-C

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| **Stem:** The patient's INR result is 5.5. | | | |
| **Question 2**<br>Vitamin K<br>**Subject:** Pharm | What methods are available to reverse warfarin induced anti-coagulation?<br>How does vitamin K reverse warfarin | **Cease warfarin**<br>**Vit K – oral or IV 1-10mg**<br>**+/- FFP or prothrombinex** | 2/3 bold to pass, must include vitamin K. |
| LOA: 2 | effect?<br><br><br><br>How long does it take for vitamin K to work? | Pharmacodynamic interaction with warfarin to reduce INR ie **reverses the effect of warfarin**<br>**Re-establishes normal activity of the clotting factors. Vit K dependant clotting factors: II, VII, IX,X**<br><br>**6 - 24 Hours** | Bold to pass<br><br><br><br>>6 hrs |

Vitamin K 2006-1

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| Vit K | What are the preferred administration routes for Vitamin K?<br><br>What are the clinical indications for prescribing Vitamin K? | **Oral, , im iv**<br>SC erratic<br><br>**Reversal of oral anticoagulant effect**<br>**Management of warfarin toxicity**<br>or superwarfarin toxicity (brodifacoum)<br>**Vit K defic**<br>Prevention of haemorrhagic disease of the newborn<br>Treatment of haemorrhagic disease of the newborn | ORAL DOSE - Absorption is inconsistent Rapid intravenous infusion may produce flushing, cyanosis, dizziness, hypotension, and bronchoconstriction.<br><br>ORAL VITAMIN may be indicated in small ingestions or when the amount is uncertain, but presumed to be small.<br><br>INTRAVENOUS VITAMIN K INDICATIONS - Intravenous phytonadione is preferable in SEVERE cases where rapid correction is required. Adults: A minimum of 10 mg IV diluted in saline or glucose at a rate not exceeding 5 percent of the total dose per minute. In maximally anticoagulated individuals, repeat doses at 6-8 hour intervals |