Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

2.1

bleeding on warfarin: **A**

anaphylaxis to penicillin: **B**

low BP on an antihypertensive: **A**

2.2

clarithromycin blocks CYP3A4, so simvastatin is broken down more slowly

the statin level rises, risking muscle damage (rhabdomyolysis)

2.3

any three of: methotrexate should be **weekly**, not daily; "10.0 mg" has a trailing zero (could be read as 100 mg); the allergy box is empty; "MTX" is an abbreviation: write the full approved name

2.4

trials are too small to find rare reactions, such as 1 in 10 000

reports from many patients after licensing reveal them

3.1

(a) the **triple whammy**

(b) NSAID: less prostaglandin, so the afferent arteriole narrows; ACE inhibitor: less angiotensin II, so the efferent arteriole widens; diuretic: lower blood volume

(c) any two of: stop the ibuprofen; pause the ramipril and furosemide; give fluids and check creatinine and K^+

(d) **paracetamol** (or a topical NSAID)

3.2

(a) fluconazole blocks the CYP enzymes that break down warfarin, so warfarin builds up and the INR rises (bleeding risk)

(b) rifampicin induces CYP enzymes, so warfarin is broken down faster and the INR falls (clot risk)

(c) induction needs new enzyme to be made, which takes days to weeks

3.3

(a) **polypharmacy**

(b) any two of: diazepam, sedation and poor balance; doxazosin, α_1 block causes low BP on standing; amitriptyline, sedation and low BP; furosemide, low BP or rushing to the toilet; oxybutynin, confusion

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(c) any two of: slower kidney and liver clearance; more drugs, so more interactions; more sensitive brain; less body water and more fat

(d) **deprescribing** (or a structured medication review)