By Adam Hollingworth

CVS Drugs

CD01 [Mar96] [Mar98] [Mar99] [Jul01] Milrinone:

A. Decreases pulmonary vascular resistance
B. Increases systemic vascular resistance
C. Is poorly absorbed when given orally - causes ↑ed mortality
D. Chronic use causes thrombocytopaenia

Alt version: Milrinone causes:

A. Chronic use causes thrombocytopaenia
B. Pulmonary vasoconstriction
C. Not effective orally
D. ?
E. ?

CD01b [Mar97] Milrinone:

A. Cannot be given orally
B. Is a phosphodiesterase III inhibitor that decreases cyclic AMP
C. Decreases peripheral vascular resistance
D. Increases pulmonary vascular resistance

CD01c [Feb00] Milrinone:

A. Is structurally related to thyroid hormone
B. Is arrhythmogenic
C. Has its effects via cAMP mediated increase in intracellular Ca2+
D. Increases myocardial oxygen consumption

CD02 [Mar96] [Mar03] Sodium nitrite used in cyanide toxicity:

A. Increases methaemoglobinaemia
B. To produce increased hepatic sulphydryl groups Na thiosulphate
C Increases conversion to cyanocobalamin (?hydroxycobalamin) hydroxycobalamine
D. Displaces cyanide from haemoglobin
E. Enhances oxidative phosphorylation only indirectly
(see also CD06, CD37)

CD03 [Mar96] [Jul96] [Jul98] [Jul99] [Feb00] [Apr01] [Mar03] [Jul04] Ephedrine:

A. Is resistant to metabolism by MAO resistant in GIT, is metab slightly by MAO in liver
B. Is metabolised by COMT
C. Action is totally indirect
D. Acts via direct & indirect beta effect & alpha
E. Action is purely alpha agonist

(Alternative versions) Ephedrine:

A. Has direct alpha actions only
B. Has direct beta actions only
C. Has indirect (alpha) actions only
D. ?
E. Has both indirect & direct actions on alpha & beta receptors

Ephedrine:

A. Alpha 1 and 2 and beta 1 & 2 & 3
B. More alpha than beta
C. *Indirect this and direct that..*
D. *Direct this and indirect that.. (etc)..*

CD03b [Apr01] [Mar02] Ephedrine:

A. ?Increases/?decreases skeletal muscle blood flow
B. Acts only by indirect effects
C. Not metabolised by GIT MAO
D. Not metabolised by COMT
E. Increase renal blood flow

CD03c [Jul01] [Jul04] Ephedrine has:

A. Direct agonist on alpha receptors
B. Direct and indirect effects on alpha and beta receptors
C. Indirect actions on alpha receptors

D. Direct actions on beta receptors

E. Indirect actions on beta receptors

CD04 [Mar96] [Jul98] The principal (?urinary) metabolite of adrenaline is:

A. Normetanephrine

B. Metanephrine

C. 3,4-dihydroxy-mandelic acid

D. 3-methoxy, 4-hydroxymandelic acid otherwise known as VMA

E. 3-Methoxy 4-hydroxy phenylalanine

CD05 [Mar96] [Jul97] [Jul98] [Mar99] [Feb00] [Apr01] [Jul01] [Feb04] Thiazide diuretics:

A. Work mainly on PCT
B. Not effective if severely sodium depleted
C. Action is independent of acid-base balance
D. Increase GFR immediately
E. Decrease BP by decreasing contractility
F. Cause hypoglycaemia
G. Interferes with kidney concentrating mechanisms
H. Causes hypocalcaemia
I. Used to treat hypercalcaemia
J. Potentiate hyperglycaemia - ↓glucose tolerance & may unmask DM. Not totally understood but involves ↓insulin secretion
K. Are effective as antihypertensives by decreasing cardiac output
L. Cause hypernatraemia
M. Washes out the medullary concentration gradient

- (*Multiple options remembered so possibly an amalgam of 2 or more questions*)

SEs:
↑Ca, ↑uric acid
↓Mg, ↓Cl, ↓Na, ↓K
hypochloraemic hypokalaemic alkalosis

MCQ-17 on July 2001 paper:
Thiazide diuretics:-

A. Increase calcium excretion in the urine.

B. Decreased efficacy in sodium depletion.
C. Main site of action is the proximal tubule.
D. Cause equivalent amount of diuresis to frusemide less. only ↑5% filtered Na output because 90% of filtered load is reabsorbed before DCT
E. ?

July 2004 version Frusemide (furosemide), not thiazides

CD06 [Mar96] Sodium nitroprusside in healthy patient:

A. Decreases venous more then arterial resistance SNP unlike GTN causes direct venous & arterial vasoD

B. Has no effect on control of pulmonary vascular resistance

C. Decreases cerebral blood flow

D. Causes uterine relaxation

E. Does not inhibit hypoxic pulmonary vasoconstriction

CD07 [Mar96] [Mar97] [Jul97] [Mar98] [Jul98] [Jul99] [Feb00] [Apr01] [Mar03] Which one of the following statements about clonidine is correct?

A. Increase MAC requirements

B. Cause transient hypertension with IV administration

C. With IV bolus causes hyper- then hypo-tension

D. Causes hypotension immediately

E. Is not (?administered/absorbed) transdermally

(see also [[CD12, [[CD36)

CD08 [Mar97] [Mar99] Regarding Digoxin:

A. The aglycone portion causes the cardiac effects

B. The glycone portion causes the cardiac effects

C. ?

D. ?

CD09 [Mar97] [Jul99] Digoxin:

A. Decreases ventricular response due to vagal stimulation in AF

B. Decreases myocardial oxygen consumption. inibit NaKATPase ⟹ ↑intracellular Na ⟹ ↓drive for NCX pump ⟹ ↑contractility ⟹ ↑O2 consumption

C. Increases the R-T interval shortern QT

D. Decreases AV conduction

CD10 [Jul97] [Jul00] [Apr01] [Jul02] Which of the following ECG changes would be most likely in digoxin toxicity:

A. Increased PR interval - possibly

B. Increased QT interval

C. Peaked T waves

D. ST elevation

E. Ventricular extrasystoles

toxicity more likely if ↓k, ↓Mg, ↑Ca

July 2000 version: Digoxin toxicity:

A. Inverted T waves

B. Prolonged PR interval

C. Xanthopsia

D. Prolonged PT interval

CD11 [Jul97] [Jul98] Regarding digoxin overdose/toxicity:

A. Serum level > 2.1 ng/ml is toxic >2 (definitely >3) 0.5-2 (considered therapeutic)

B.

C. Causes a long PR interval

D. Causes xanthopsia (OR: 'causes yellow vision')

E. Causes a long QT interval and bigeminy

CD12 [Jul97] [Mar02] [Jul02] [Jul04] Clonidine:

A. Elimination half-life of 3 hours (??or 3 to 6 hrs) 6-23hrs

B. Excreted 50% unchanged in the urine (or 50% renally excreted)

C. Oral bioavailability 50% 75-100%

D. Cannot be absorbed topically

E. Is highly protein bound 20%

CD13 -Deleted- same Q as CD05

CD14 [Jul97] [Jul98] [Jul00] [Jul04] Adenosine:

A. Slows conduction velocity and increases refractory period

B. Is metabolised in plasma rbc

C. Decreases urate levels cause ↑10-20%

D. Methylxanthines increase response inhibit response. dipyrimadole cause ↑response by competing with rbc for metabolism

(see also CD34)

CD16 [Mar96] [Jul96] [Jul97] [Jul98] Esmolol:

A. Active at beta-1 & beta-2 receptors ß1 selective but does have residual ß2 activity

B. Half-life < 2 minutes 10min

C. Has methanol as a metabolite

D. Is metabolised by (?acetyl/?plasma) cholinesterase rbc and plasma esterases NOT cholinesterase

E. Is excreted unchanged in the urine

F. Is a non-selective beta-1 receptor antagonist

CD16b [Feb04] [Jul04] Esmolol

A. Is a non-selective beta antagonist

B. Has intrinsic sympathomimetic activity

C. Does not have membrane stabilising activity

D. ?

CD16c [Feb12]
Esmolol:
A is broken down by plasma cholinesterases.
B has significant membrane stabilising effects
C has active metabolites methanol & major acid metabolite which weakly active with long elim half life
D has intrinisic sympathomimetic properties
E is a non-selective agent

CD17 [Jul97] [Jul98] [Mar99] [Jul99] [Jul01] [Jul04] Osmotic diuretics (?Mannitol):

A. Less sodium delivered to distal tubule
B. Hypotonic medulla - isotonic
C. Increased sodium loss
D. Urine osmolality > plasma osmolality same
E. Increased sodium reabsorption / ?causes hytpernatraemia
F. ?MW greater than 600 182
G. Washes out the medullary interstitial gradient
(see also MD07)

MCQ-16 on July 2001]] paper:

Osmotic diuretics:

A. Include mannitol and the dextrans.
B. Wash out the medullary osmotic gradient.
C. Cause sodium retention
D. ?
E. Have a molecular weight >600

CD18 [Jul97] Guanethidine:

A. Causes sedation as a side effect
B. Postural hypotension occurs
C. Decreases reuptake of catechols presynaptically
D. ?

CD19 [Jul97] [Jul99] Labetalol:

A. Alpha agonist & beta agonist

B. Alpha agonist & beta antagonist

C. Alpha antagonist & beta antagonist

D. Is a more potent alpha blocker than phenoxybenzamine

E. Alpha > beta effect

"Labetalol is formulated as a recemic mixture of four isomers... Two ...are inactive, a third (S,R) is a potent alpha-blockers, and the last (R,R) is a potent beta-blocker... Labetalol has 3:1 ratio of beta:alpha antagonism"

does have partial agonist acitivty at ß2

CD20 [Mar98] [Jul98] [Jul99] [Feb00] [Apr01] [Jul04] Frusemide:

A. 30% plasma protein binding

B. ??% absorption

C. Elimination half-life less than one hour

D. Promotes active secretion

E. Affects the uricosuric effect of probenecid

F. Effects not decreased until large decrease in GFR

G. Causes a diuresis which is dependant on GFR over a wide range

Apr 2001 version: Frusemide:

A. Has 30% (?35%) protein binding

B. Has an elimination half-life less than 1 hour

C. 90% excreted in bile

D. Increases rate of secretion in the renal tubules

CD20b [Jul00] [Jul02] Frusemide does NOT cause:

A. Hyponatremia

B. Hypokalemia

C. Hypouricemia

D. Hypomagnesemia

E. Hypocalcemia

CD21 [Mar98] [Jul98] The antiarrhythmic effect of lignocaine:

A. Because it incvreases the refractoriness of in cardiac muscle

B. Therapeutic level 2-5ng/ml mcg

C. ?

CD22 [Jul98] [Feb04] [Jul04] The effects of beta blockers – the following is not true

A. Relax uterine muscle

B. Increased AV conduction

C. Decreased lipolysis

D. Increased SVR

E. Mask hypoglycaemia

F. Negative inotropy

G. Opposing effects of insulin

H. ↑ Lipolysis

CD23 [Mar96] [Jul96] [Jul00] [Apr01] Phentolamine: = non selective competitve α antagonist

phenoxybenzamine = non-competitive antagonist

A. Is a selective alpha-1 antagonist

B. Binds covalently to the alpha receptor

C. Causes bradycardia

D. Is a selective alpha-2 antagonist

E. Increases cardiac output - ↓SVR ⟹ ↑CO

CD24 [Mar96] [Feb00] [Mar03] A non-selective beta-blocker with low extraction ratio, long half-life and ISA:

A. Atenolol ß1 selective

B. Propranolol non selective but lacks ISA

C. Metoprolol ß1 selective

D. Labetalol ISA for ß2, non selective

E. ?

CD24b [Mar02] [Jul02] Which ONE of the following is water soluble, half life 6-8hrs, ("and something else")?

A. Esmolol t1/2 10mins

B. Metoprolol 3-4hr

C. Propranalol 3-4

D. ?

E. Atenolol elim unchanged renally, t1/2 6-9hr, low lipid soluble

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Which one of the following selective beta blockers has a low
extraction ratio and is predominantly excreted in urine?
A. Propranolol
B. Esmolol
C. Atenolol
D. Metoprolol
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CD26 [Jul98] [Mar99] [Mar03] [Feb04] [Jul04] Sotalol:

A. Non-selective beta-blocker
B. Contraindicated in long QT
C. Increases K+ conductance class III K channel blocker
D. Used in the treatment of torsades
E. Class II anti-arrhythmic drug class II, & class III (usually under III)
F. Is a selective beta 1 antagonist
G. Blocks K+ channels

CD27 [Mar99] Trimetaphan: = ganglion blocking drug used in hypotensive anaesthesia.

A. Crosses the blood-blood barrier
B. Incompatible with thiopentone
C. ?

CD28 [Mar99] Diazoxide:

A. Has diuretic activity - causes Na & water retention

B. Opens ATP-dependent K channels

C. Not absorbed orally can Rx hypoglycaemia

D. ?

CD29 [ghj] [Jul00] Phenylephrine:

A. Metabolised by COMT

B. Causes mydriasis

C. Metabolised by MAO

D. Effect lasts (?same time as/?longer than) noradrenaline longer

E. Acts by indirect method only

CD30 [Jul98] Regarding hydrallazine:

A. Fast acetylators have shorter half lives than slow acetylators

B. Acts via SNS mechanism

C. Slow acetylators decrease half-life

D. Has diuretic action

E. Clearance > 50ml/kg/min

(see also [[CD32, [[CD35)

CD31 [Mar99] Which ONE of the following beta-blockers is selective fore beta-1 receptors?

(No other details)

= atenolol(6-7), bisoprolol(9-12), esmolol(0.15), metoprolol(3-7)

CD32 [Jul99] Which of the following statements about hydrallazine is (?true/false)?:

A. Acts via alpha 1 receptors is a relaxant!

B. ?

C. ?

D. ?

E. Has a duration of action of 1-2 hours. onset 10-20min, lasts 3-6hrs

CD33 [Jul99] Concerning Dobutamine

A. Levo has alpha 1 antagonist and beta agonist effects

B. Levo has partial alpha agonist effect and beta effects

C. Is a pure beta agonist

D. ?

my notes & ganong state is pure ß1 >> ß2 agonist.

black bank blather on about Levo isomer = α **ag**onist & dextro ismoer = α **antag**onist ∴ cancelling each other out. Gay

CD34 [Feb00] [Apr01] [Jul01] Adenosine

A. Causes AV block via action at A1 receptors

B. Causes bronchoconstriction via A2 receptors

C. Causes renal vasodilation - is a vasodD so maybe

D. Causes profound depression of the SA node

E. Decreases AV transmission - it does but a bit generic

(see also [[CD14)

CD35 [Feb00] Mechanism of action of hydralazine

A. Selective cerebral, coronary, renal vasodilator is it selective???

B. Alpha agonist

C. None of the above???maybe

Hydralazine is a general vasodilator (arterioles) which reduces TPR causing a compensatory increase in HR -> increase in CO and blood flow to brain, heart, kidneys especially (but not exclusively - also get skin flushing due to increase skin blood flow) Hence C (which is

probably D)

CD36 [Jul00] [Jul04] Clonidine:

A. Causes hypertension and tachycardia

B. Causes bradycardia - due to ↓SNS output ⟹ ↓HR, ↓bp & ↓CO

C. A single dose given orally is significantly less effective then an intravenous dose rapid absorbed

D. Counteracts the hypertensive response in phaeochromocytoma

E. ?

(see also [[CD07, [[CD12)

CD36b [Jul04] Clonidine can cause these, except

A. Bradycardia

B. Apnoea

C. Sedation

D. ?

CD37 [Jul00] [Jul04] The first sign of sodium nitroprusside toxicity is:

A. Cyanide toxicity

B. Tachyphylaxis ie therapeutic ceiling & impending toxicity

C. Hypotension

D. ?

(see also [[CD02, [[CD06)

other signs of toxicity

a. Increased mixed venous PO2 indicating paralysis of cytochrome oxidase and inability of tissues to use O2

b. b. metabolic acidosis (secondary to anaerobic metabolism). Monitor blood lactate, which correlates well with increasing blood cyanide concentrations.

c. c. CNS dysfunction in awake pts

CD38 [Apr01] Dexmedetomidine:

A. Alpha-1 antagonist

B. ?

C. Decrease in intraocular pressure

D. Partial alpha2 agonist

E. Less selective than clonidine

CD39 [Jul01] [Jul04] Amiloride:

A. Potassium sparing antidiuretic which blocks the aldosterone receptor - block Na channel which have been inserted in response to aldosterone

B. Blocks luminal sodium channels in the collecting tubules

C. Increases potassium excretion.

D. Is metabolised by the liver. excreted unchanged

E. Has a short elimination half time. 18-24hrs

CD40 [Jul01] With regard to sodium nitrite in cyanide (CN) toxicity:

A. Causes MetHb

B. Used to create more hydrocobalamin

C. Used to displace CN from Hb

D. Creates more sulfhydryl groups

CD41 [Jul01] Methylxanthines:

A. (Something about Ca^{++} currents)

B. (Something about K^{+} currents)

C. Inhibit adenosine receptors = A1 receptor antagonists & phosphodiesterase inhibitors $\Longrightarrow$ ↑cAMP

D. Decrease plasma glucose level ↑BSL

E.?? Cause diuresis by acting on renal tubules - inhibitor ADh secretion & inhibition of prox tubular Na reabsorption

F. Physically addictive

CD42 [Feb04] [Jul04]

Which is the initial drug to use in the treatment of ventricular fibrillation?

A. Amiodarone

B. Lignocaine

C. Adrenaline

D. Magnesium

E. Sotalol

CD43 [Feb04] All are side effects of Thiazides except:

A. Hypokalaemia

B. Hypernatraemia

C. Impaired carbohydrate tolerance

D. Pancreatitis

CD44 [Feb04] Why do you give adrenaline for VF?

A. To coarsen fine VF

B. To improve coronary blood flow

C. Increase chronotropy

CD45 [Feb04] Nitroprusside toxicity:

A. Treat with ???

B. ?

CD46 [Jul04] Which of the following is a sign of SNP toxicity?

A. Tachyphylaxis

B. Decreased mixed venous PO2

C. Sudden decrease in arterial PO2

D. ?Hypotension

CD47 [Jul04] Dihydropyridine Ca channel blocker causes peripheral oedema due to

Dihydro**py**rid**ine**s end with -**dipine**

A. vasodilator causing redistribution of ECF
B. has a mild antidiuretic effect, and therefore easily treatable with diuretic actually weak intrinisic pro-diuretic
C. salt and water retention due to hypotension
D. ?

CD48 [Jul04] Isoprenaline

A. can be used as a substitute to Metaraminol for treatment of hypotension
B. used extensively to treat ischaemic heart disease - ↓DBP ∴ ↓coronary blood flow & ↑contractility ∴ ↑O2 requirement
C. cause decrease SVR
D. cause bradycardia - tachy
E. ?

CD49 Which one of the following is NOT an adverse effect of amiodarone?

A. Pulmonary fibrosis 5-15%, mortality 5-10%
B. Photosensitive rash up to 10%
C. Corneal microdeposits all pts after few weeks of Rx
D. cardiomyopathy - but does cause brady/block/arrhythmias
E. thyrotoxicosis does cause

CD50 The beta blocker with the greatest oral bioavailability is:

A. Atenolol 50
B. Metoprolol 10
C. Sotalol 100
D. Labetalol 90
E. Carvedilol 30

- Others: ??Propranolol ??Esmolol

CD51 Dexmedetomidine

A. MAC sparing for isoflurane by maximal 30%
B. can cause bradycardia & sinus arrest
C. increases CBF - smooth mm relax or ↓CBF
D. ?
E. ?

CD52 [Jul08] Acetazolamide:

A. maximum increase in urine pH 8 hours after oral dose 2hours post
B. maximum safe dose causes complete absence of HCO3 reabsorption
C. maximum safe dose decreases HCO3 reabsorption (?to) 45% of whole kidney
D. causes hypochloraemic acidosis hyperchloraemic acidosis
E. is a potassium sparing diuretic distal tubule excrete K in exchange for Na

- Carbonic anhydrase inhibition causes a rapid rise to excretion of ~35% filtered HCO3- load
- Even with a "high degree" of inhibition, ~65% of filtered load reabsorbed by unknown, downstream, non-carbonic anhydrase related mechanisms

CD53 [Mar09] Acetazolamide

A. Structurally related to procainamide and may have anti-arrhythmic activity at high doses
B. *Something about metabolism*
C. It is not metabolised and is excreted unchanged in the urine.
D. ?

CD54 [Mar09] Pharmacokinetics of amiodarone:

A. Oral bioavailability is reliable poor & variable
B. Doses must be reduced in renal and hepatic failure only in liver failure. renal failure apparently not a problem as half life of axtive metabolite can be weeks anyway
C. Omission of 1 or 2 doses can lead to severe consequences
D. Metabolism is via ?hydroxylation/demethylation?
E. ?Increases/?decreases refractory period

CD55 Sympathomimetics:

A. Phenylephrine acts only on alpha receptors
B. Metaraminol acts only on alpha receptors
C. Methoxamine in high doses acts on beta receptors high doses has inhibitory effect on ß receptors - may ⟹ bradycardia
D. Pseudoephedrine is an isomer of ephedrine = stereo isomer
E. ?

CD56 Whice ONE of the following is True about vasopressin?

A. Slowly metabolized by renal peptidase liver & kidneys
B. Does not cause coronary vasoconstriction
C. Causes mesenteric vasoconstriction - terlipressin an ADH analogue
D. Increases plasma level of factor VIII DDAVP
E. Is an orally active derivative of ADH 0% OBA

CD57 Clonidine:

A. Dry mouth and agitation are very common side effects
B. Half life is 24-48 hours
C. ?
D. Can cause severe hypertension if withdrawn abruptly after long term therapy with large doses
E. Therapeutic dose is 2-5mg per day

CD58 Beta adrenergic receptor antagonists

A. Seldom causes inhibition of lipolyisis
B. Causes inhibition of gluconeogenesis caused by adrenergic stimulation following hypoglycaemia
C. Does not mask the signs of hypoglycaemia
D Sudden cessation is not associated with rebound effects
E. There is no evidence of cardiac protection for high risk patients pre-operatively

CD59 Labetalol:

A. Beta and alpha antagomisn with partial agonist activity at alpha 2 receptors
B. Beta and alpha 1 antagonist
C. Alpha agonist and beta 1 antagonist
D. ?
E. ?

CD60 GTN is helpful myocardial infarction by:

A. Decreasing left ventricular pressure and mean arteriolar pressure
B. Producing methaemoglobinaemia
C. improving coronary blood flow by dilating the small arterioles dilates large arterioles
D. ?
E. ?

CD61 Which of the following could cause significant adverse reactions with the MAO-i selegiline?

A. Dopamine
B. Phenylephrine
C. Ephedrine
D. Metaraminol
E. None of the above

CD62 Mannitol:

A. Causes loss of medullary tonicity
B. Urine hyperosmolar compared to plasma
C. Site of action is PCT and DCT
D. Tubular fluid is isotonic in descending loop of Henle

CD63 Clonidine side effects

A. Sedation
B. Nausea and vomiting
C. ?
D. ?
E. delirium

CD64 With regards to SNP toxicitity:

A treated with sodium thiosulphate - ↑SCN >100x less toxic
B treated with GTN
C one SNP molecule releases four CN- ions 5
D. (Edit: *think this also contained an incorrect answer about minimising methaemoglobin levels or something like that*)

CD65 A blood test is taken on a patient who is on a diuretic drug. It shows hyperkalaemia and hyponatraemia. The drug is most likely to be:

A. Triamterene
B. Hydrochlorothiazide
C. Frusemide
D. Indapamide
E. Spironolactone

CD66 Vasopressin is used in all except:

A. Variceal bleed
B. To improve coronary and cerebral perfusion in cardiac arrest
C. Nephrogenic diabetes insipidus
D. Septic Shock

CD67 Amphetamine is:

A. A catecholamine synthetic non-catecholamine
B. Similar presentation to cocaine toxicity
C. Can cause tolerance (or ?withdraw) tachyphylaxis is prominent
D. ?
E. Presents often as coma

CD68 Ventricular fibrillation (VF) in an adult:

A lignocaine 1.5mg/kg is first line treatment
B high dose adrenaline (100mcg/kg) improves outcome in "in hospital cardiac arrest"
C bicarbonate indicated if ph< 7.2
D vasopressin increase coronary and cerebral perfusion via its action at V1 receptors
E caution with use of amiodarone as it may cause Torsades