CPD April 2024

Day 1: Known as an antibiotic with anti-parasitic properties, [#metronidazole](https://twitter.com/hashtag/metronidazole?src=hashtag_click) was discovered in the 1960s for efficacy against amoebic dysentery. This led to the accidental discovery of activity against anaerobic bacterial infections with expanded use in 1970s

[[](https://twitter.com/reesprescribe)](https://twitter.com/reesprescribe)

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Day 2: [#metronidazole](https://twitter.com/hashtag/metronidazole?src=hashtag_click) treats protozoal & anaerobic infections age > 1 month old e.g H.pylori, G.vaginalis. Complex infections e.g diabetic foot infection. Used orally & i.v, as well as topical for rosacea & intravaginal for bacterial vaginosis. Prophylaxis & tx animal bites. Standard oral dosing 400mg x 3/day

Day 3: Good oral absorption/bioavailability. High Vd across placenta & BBB with penetration into most body tissues. Hepatic breakdown via oxidation & glucuronidation. Predominantly renal excretion. Elimination t½ 6-10 hrs. Caution/dose reduction severe hepatic impairment. No adjustment needed for renal failure. [#metronidazole](https://twitter.com/hashtag/metronidazole?src=hashtag_click) is not known to be harmful in pregnancy or lactation

Day 4: [#metronidazole](https://twitter.com/hashtag/metronidazole?src=hashtag_click) is activated by metabolism once inside an anaerobic bacterial cell via reduction/ferredoxins. This leads to free radicals, DNA damage & bactericidal effects. Aerobic cells/tissues can uptake but cannot activate, so the antibiotic is selectively cytotoxic to facultative anaerobic microorganisms

Day 5: There are no 'common' ADEs for oral use of #metronidazole; Frequency not known:depression, taste change, GI disturbance, peripheral neuropathy (prolonged use). i.v common include dry mouth, metallic taste, nausea. Rare (oral/i.v) pancytopenia, vision disorders. Vaginal; vulvovaginal disorders (NOT exhaustive)

Day 6: [#metronidazole](https://twitter.com/hashtag/metronidazole?src=hashtag_click) can increase the risk of capecitabine & lithium toxicity & can increase the anti-coagulation effect of warfarin. ‘Disulfiram’ reaction with alcohol (avoid while using & for 48hrs after) as causes flushing, nausea, tachycardia etc (DDIs NOT exhaustive).

Day 7: High use of [#metronidazole](https://twitter.com/hashtag/metronidazole?src=hashtag_click) in dentistry (gingivitis, abscesses etc) & for treatment of H.pylori gives rise to resistance concerns. Mechanisms such as inactivation of the reductase encoding genes required for the intra-cell activation of [#metronidazole](https://twitter.com/hashtag/metronidazole?src=hashtag_click) are cited

CPD. In addition to the tweets, read the BNF monograph on metronidazole and the (several) related treatment summaries. Another useful source is the Summary of Product Characteristics for metronidazole– see links below

<https://bnf.nice.org.uk/drugs/metronidazole/>

<https://bnf.nice.org.uk/drugs/metronidazole/#related-treatment-summaries>

<https://www.medicines.org.uk/emc/product/11952/smpc#gref>

1.Metronidazole needs to be oxidised in order to work

True or False

2.Metronidazole is bactericidal

True or False

3.Metronidazole is safe to use in all stages of renal impairment

True or False

4. Which of the following is TRUE?

1. Metronidazole crosses the blood brain barrier
2. Metronidazole can only cross into anaerobic bacterial cells
3. Metronidazole is only given via oral administration
4. Metronidazole should not be combined with other antibiotics

5. Metronidazole only works against gram negative anaerobic bacteria

True or False

6.Metronidazole is only used in adults

True or False

7.Which is TRUE?

1. Alcohol is safe to use when taking metronidazole
2. There are no ‘common’ adverse drug reactions for oral metronidazole
3. Metronidazole is never used for prolonged courses because of high risks such as cancer
4. Metronidazole can be used at standard doses in all stages of hepatic impairment

8. There is a severe drug- drug interaction between metronidazole and all anti-coagulants

True or False

9. Metronidazole is used as part of the triple therapy for H pylori eradication

True or False

10. Alcohol should be avoided while taking metronidazole and then for 2 days after

True or False