CPD July 2024

[[A person smiling at camera

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Day 1: Convinced that rheumatoid arthritis (RA) had a bacterial cause, Professor Nanna Svartz tested sulfapyridine on her patients. After minimal success, a drug company helped her to combine this with an aspirin-like drug (5-ASA). This compound [#sulfasalazine](https://x.com/hashtag/sulfasalazine?src=hashtag_click) was formed around 1940 & showed efficacy for RA & ulcerative colitis

Day 2: [#sulfasalazine](https://x.com/hashtag/sulfasalazine?src=hashtag_click) is licensed for use for acute treatment & 'remission maintenance' for inflammatory bowel disease, as well as active RA. Oral & rectal delivery with dose dependent on acute/remission status & severity. Licensed for adult & children >2, but not for juvenile ideopathic athritis. #sulfasalazine is currently one of the first-line ‘conventional’ DMARDs in RA. As for all DMARDs, effects can take up to three months

Day 3: Prodrug [#sulfasalazine](https://x.com/hashtag/sulfasalazine?src=hashtag_click) is too big for intestinal absorption. The active components are released in the colon by action of gut bacteria. 5-ASA is eliminated in faeces, but sulfapyridine is systemically absorbed & liver metabolism occurs mainly acetylation. Renal excretion; t½ ~8hrs. Genetic variation for slow acetylators can be issue as prolonged time to eliminate the sulfapyridine component increases risk of adverse effects (t½ ↑ 14+hrs). For all, renal impairment/elderly may need dose reduction. Avoid in severe impairment

Day 4: Mechanism of action remains unclear. Anti-inflammatory effects include 5-ASA action on prostaglandin pathway inhibition & activation of PPAR-γ (suppresses target inflammatory response genes). Immune suppression from reduced cytokine production eg TNF-alpha, IL-8, monocyte chemotactic protein-1 & ↓antibody production.

Day 5: As per sulfa drugs, [#sulfasalazine](https://x.com/hashtag/sulfasalazine?src=hashtag_click) can cause allergy e.g anaphylaxis & serum sickness. Common ADEs include reduced appetite, nausea, insomnia, tinnitus, abdominal pain. Close blood, renal,hepatic monitoring as risk of blood disorders, especially 1st 3-6 months of treatment eg leucopenia (common). [#sulfasalazine](https://x.com/hashtag/sulfasalazine?src=hashtag_click) can reduce absorption of folic acid; supplements needed in pregnancy. Male fertility can be affected re low sperm count (reversible). The drug is a yellow/brown colour & can stain skin, discolour urine & even soft contact lenses (ADEs NOT exhaustive)

Day 6: [#sulfasalazine](https://x.com/hashtag/sulfasalazine?src=hashtag_click) DDIs; drugs which increase exposure can cause a ‘severe’ interaction e.g anti-virals like voxilaprevir. Can reduce digoxin absorption & can worsen hypoglycaemia. Increased risk of bone marrow suppression with mercaptopurine or azathioprine (NOT exhaustive).

Day 7.For inflammatory bowel disease, the main action of [#sulfasalazine](https://x.com/hashtag/sulfasalazine?src=hashtag_click) comes from the 5-ASA component. Once an alternative delivery system to the sulfapyridine 'carrier' into the colon was invented, formulation as just the 5-ASA ‘mesalazine’ for topical action was possible

CPD. In addition to the tweets, read the BNF monograph on sulfasalazine and the treatment summary for Rheumatic disease, suppressing drugs and Crohn’s disease. Another useful source is the Summary of Product Characteristics for sulfasalazine – see links below

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

<https://bnf.nice.org.uk/treatment-summaries/rheumatic-disease-suppressing-drugs/>

<https://bnf.nice.org.uk/treatment-summaries/crohns-disease/>

<https://www.medicines.org.uk/emc/product/3838/smpc#gref>

1. **Sulfasalazine was invented around 1900, but not used for a long time**

**TRUE or FALSE**

1. **Sulfasalazine is a combination of two active drug components**

**TRUE or FALSE**

1. **The drug sulfasalazine in carried to the large intestine where gut bacteria break it down**

**TRUE or FALSE**

1. **Which of the following is TRUE?**
2. **All components of sulfasalazine are taken in large quantities into the systemic circulation**
3. **The drug is metabolised in the kidney via hydroxylation**
4. **The drug is metabolised in the liver via acetylation**
5. **Sulfasalazine can be taken at all levels of renal impairment**

**5. Sulfasalazine has an anti-inflammatory action, but no immune suppression**

**TRUE or FALSE**

1. **Genetic variation in drug metabolism can increase risk of adverse drug effects**

**TRUE or FALSE**

1. **Which of the following is the correct set for ‘common’ side-effects**
2. **Vomiting, rash, abdominal disturbance, leucopenia**
3. **Aggravation of ulcerative colitis, renal failure, low sperm count, constipation**
4. **Smell disturbance, yellow discoloration of body fluids, vertigo, hepatic failure**
5. **Vasculitis, ankle oedema, psychosis, myalgia**
6. **Aminosalicylates such as mesalazine on their own are usually preferred for inflammatory bowel disease as they are better tolerated**

**TRUE or FALSE**

1. **As a relative of sulfonylurea drugs, sulfasalazine can lower blood glucose**

**TRUE or FALSE**

1. **Sulfasalazine can reduce the absorption of iron in the gut**

**TRUE or FALSE**