JPP May 2022: Indapamide

Day 1: Labelled a ‘thiazide-like’ diuretic (as it acts in the distal convoluted tubule), [#indapamide](https://twitter.com/search?q=%23indapamide) is actually a non-thiazide sulfonamide. Derived in the late 1960s from benzamide (found in plants e.g autumn crocus), it was designed to retain blood pressure lowering effect, as distinct from diuresis

Day 2: Oral formation only for [#indapamide](https://twitter.com/search?q=%23indapamide). In UK licensed use for essential hypertension at 2.5mg once daily, or modified release 1.5mg once daily.

Day 3: Kinetics [#indapamide](https://twitter.com/search?q=%23indapamide);good oral absorption, cmax 1-2 hrs. Binds to RBCs & plasma proteins, then taken up through vascular walls where it acts. Liver metabolism via CYP3A4 with 1 active metabolite. Renal excretion (avoid in severe impairment), but ~ 23% gastrointestinal excretion. T½ 15-18 hrs

Day 4 MOA: [#indapamide](https://twitter.com/search?q=%23indapamide) lowers blood pressure mainly via vascular action (as opposed to diuresis) by reducing calcium uptake in vascular smooth muscle, leading to impaired vasoconstriction. Also more vasodilation via increased prostaglandin levels (PGE2 & prostacyclin) & increased bradykinin levels (also all relevant to reduced platelet aggregation). Indapamide also reduces left ventricular hypertrophy.

Day 4 (cont) Major advantages for [#indapamide](https://twitter.com/search?q=%23indapamide) re mechanism of action include no relevant change to glucose or lipid metabolism, so doesn’t worsen/cause type 2 diabetes (unlike some thiazide diuretics). Can use in combination with other antihypertensives

Day 5 [#indapamide](https://twitter.com/search?q=%23indapamide) ADEs: Common include hypersensitivity reactions, rash & clinically significant electrolyte disturbances e.g hypokalaemia; needs pre-therapy & regular monitoring. Rare/serious incl angioedema,renal failure, SCARs, aplastic anaemia, vision disorders (NOT exhaustive)

Day 5 (cont). Up to 8% population have ‘sulfa’ allergy, hence contraindication in SPC/BNF for [#indapamide](https://twitter.com/search?q=%23indapamide). Relevance re cross-sensitivity to [#indapamide](https://twitter.com/search?q=%23indapamide) is unknown; individual history important

Day 6: [#indapamide](https://twitter.com/search?q=%23indapamide) DDIs. All NSAIDs re renal failure; multiple interactions can cause electrolyte issues e.g NSAIDs, gabapentin, lithium, sertraline. Increased risk arrhythmias e.g quinine. All antihypertensives potentiate hypotension. Can increase risk of allergy to allopurinol! (NOT exhaustive). Metformin is in the SPC (but not BNF) as a drug-drug interaction for [#indapamide](https://twitter.com/search?q=%23indapamide) re lactic acidosis risk enhanced in renal failure

Day 7: As a diuretic, [#indapamide](https://twitter.com/search?q=%23indapamide) is a banned substance in arena of sports doping (unless TUE); abuse possible via rapid weight loss &/or dilution of other banned agents from the increased urine volume/changes in urine content, allowing use as a ‘masking agent’

CPD: in addition to the tweets, read the BNF treatment summaries on diuretics and hypertension, as well as the monograph on indapamide. Another useful source is the Summary of Product Characteristics for indapamide – see links below

<https://bnf.nice.org.uk/treatment-summary/diuretics.html>

<https://bnf.nice.org.uk/treatment-summary/hypertension.html>

<https://bnf.nice.org.uk/drug/indapamide.html>

<https://www.medicines.org.uk/emc/medicine/26709#gref>

1. There are lots of formulations for indapamide

TRUE or FALSE

1. Indapamide is a loop diuretic

TRUE or FALSE

1. Which is TRUE?
2. Indapamide acts in the DCT, but its main action lowering blood pressure occurs on the blood vessels
3. Indapamide acts in the LOH and effects powerful diuresis
4. Indapamide dilate veins and increases afterload
5. Indapamide acts at multiple sites in the nephron to exert diuresis
6. Indapamide is ineffective if the CrCl is below 30mL/min

TRUE or FALSE

1. Indapamide is one of the first line diuretics for the management of hypertension

TRUE or FALSE

1. Which of the following is considered to be an advantage of indapamide?
2. Electrolyte disturbances help to give better diuresis
3. Some of the drug is excreted via the gut
4. There is no relevant effect on glucose regulation
5. The drug binds to red blood cells in the systemic circulation
6. Which of the following is a common adverse drug effect?
7. Vomiting
8. Vertigo
9. Vision disorders
10. Electrolyte disturbances
11. Indapamide has a ‘severe’ drug-drug interaction with allopurinol

TRUE or FALSE

1. Indapamide is the only diuretic which is banned in sports doping testing

TRUE or FALSE

1. It is possible to be allergic to indapamide

TRUE or FALSE