NCLEX-RN · PHARMACOLOGY · GI SYSTEM

2026 NGN TEST PLAN · NCJMM ALIGNED

HIGH-YIELD INFOGRAPHIC · NO. 07

5-Aminosalicylates (5-ASA)

CLASS GI Anti-inflammatory · Salicylate Derivative **SYSTEM** Gastrointestinal **TOP INDICATION** Ulcerative Colitis

01 DRUG OVERVIEW

INDICATIONS

- **1st-line** for mild-to-moderate **ulcerative colitis (UC)** — induction + maintenance of remission
- Adjunct in **Crohn's disease** (limited efficacy; colonic disease only)
- **Sulfasalazine** also used in rheumatoid arthritis & juvenile idiopathic arthritis
- **Topical/rectal forms** (enema, suppository) → distal/left-sided UC & proctitis
- Goal: *mucosal healing*, not just symptom control

★ MOST TESTED DRUGS IN CLASS

GENERIC	BRAND	KEY FEATURE
Mesalamine	Asacol, Pentasa, Lialda, Rowasa, Apriso	Pure 5-ASA · fewest systemic SE
Sulfasalazine	Azulfidine	Prodrug (5-ASA + sulfapyridine) · *sulfa allergy!*
Olsalazine	Dipentum	Paradoxical diarrhea in 15–20%
Balsalazide	Colazal	Colon-specific activation

02 MECHANISM OF ACTION — SIMPLIFIED

TOPICAL GI ANTI-INFLAMMATORY

5-ASA delivered to **colonic mucosa** → Inhibits **COX** & **lipoxygenase** pathways → ↓ Prostaglandins · ↓ Leukotrienes · ↓ TNF-α · ↓ NF-κB

→ **Scavenges free radicals** in bowel wall → protects epithelium

→ **Suppresses pro-inflammatory cytokines** → mucosal healing & remission

→ Acts **topically** in the gut (not systemically) → safer profile than steroids

03 THERAPEUTIC EFFECTS

SIGNS IT'S WORKING

- ↓ Stool frequency & urgency
- ↓ Rectal bleeding & mucus
- ↓ Abdominal pain & cramping
- Formed stools return
- ↓ Inflammatory markers (ESR, CRP, fecal calprotectin)
- Mucosal healing on colonoscopy
- **Onset:** 2–4 weeks for full effect → *do NOT stop early*

04 SIDE EFFECTS & ADVERSE REACTIONS

COMMON / SERIOUS

COMMON (MONITOR, TOLERABLE)

- Headache, nausea, dyspepsia
- Abdominal pain, flatulence, diarrhea
- Rash, photosensitivity
- **Orange-yellow urine/skin** (sulfasalazine) — harmless & expected

SERIOUS (HOLD & NOTIFY)

- *Interstitial nephritis* → **#1 priority concern** (mesalamine)
- *Hepatotoxicity* → ↑ AST/ALT, jaundice
- *Blood dyscrasias* → agranulocytosis, aplastic anemia (sulfasalazine)
- *Stevens-Johnson syndrome / TEN* → rash + fever = STOP drug
- *Pancreatitis, pericarditis, myocarditis*
- *Hemolytic anemia* in G6PD deficiency (sulfasalazine)
- *Mesalamine intolerance syndrome* → paradoxical worsening of colitis

05 PRIORITY NURSING CONSIDERATIONS

ASSESS · MONITOR · HOLD · NOTIFY

→ ASSESS

- **Allergy screen:** salicylate/ASA · sulfa (for sulfasalazine)
- Baseline renal, hepatic, CBC
- G6PD status (sulfasalazine)
- Pregnancy status

→ MONITOR

- BUN, creatinine, UA q3–6 months
- LFTs, CBC with diff
- Stool frequency & character
- Signs of SJS: rash + fever + mucosal lesions
- Signs of nephritis: ↓ urine output, hematuria, flank pain

→ HOLD & NOTIFY HCP

- *↑ Creatinine or new proteinuria*
- *Severe rash, blistering, fever*
- *Unusual bleeding/bruising, sore throat*
- *Jaundice or ↑ LFTs ≥ 3× ULN*
- *Severe abdominal pain (pancreatitis)*
- *Worsening diarrhea/bloody stools* → intolerance syndrome

CONTRAINDICATIONS & INTERACTIONS

- **Contraindicated:** salicylate/ASA hypersensitivity · severe renal or hepatic impairment · intestinal/urinary obstruction · infants <2 yrs (sulfa)
- **Sulfasalazine only:** sulfa allergy · G6PD deficiency (caution) · porphyria
- **Interactions:** warfarin (↑ bleeding) · methotrexate (↑ toxicity) · digoxin (↓ absorption) · sulfonylureas (↑ hypoglycemia w/ sulfasalazine) · **avoid NSAIDs** (additive nephrotoxicity)

06 LABS & DIAGNOSTICS

CRITICAL VALUES

- **Creatinine / BUN** — ↑ = nephritis · baseline + q3–6 mo
- **Urinalysis** — proteinuria or hematuria = early renal injury
- **AST / ALT** — ↑ ≥ 3× ULN = hepatotoxicity
- **CBC w/ diff** — ↓ WBC <3,000, ↓ platelets, ↓ Hgb → dyscrasia
- **Folate level** — low w/ sulfasalazine (impairs absorption)
- **ESR / CRP / fecal calprotectin** — trend disease activity
- **G6PD screen** — before sulfasalazine in at-risk populations

07 ADMINISTRATION & SAFETY

ROUTE · TIMING

- **PO with food** + full glass of water → ↓ GI upset
- **DO NOT crush/chew** enteric-coated or delayed-release tablets → destroys site-specific delivery
- **Suppository (Rowasa):** retain 1–3 hrs · bedtime dosing ideal
- **Enema:** retain overnight in *left lateral* position
- **Sulfasalazine:** co-administer *folic acid* supplement
- Maintain **2–3 L fluid/day** → prevent crystalluria
- Site-specific release: *Pentasa* (SB→colon) · *Asacol* (ileum/colon) · *Lialda* (colon) · *Rowasa* (rectum)

08 PATIENT EDUCATION

TEACH BEFORE DISCHARGE

WHAT TO KNOW

- **Keep taking** even when feeling well — prevents relapse
- Takes **2–4 weeks** to see full effect
- Orange-yellow urine/sweat/tears w/ sulfasalazine is **normal**; may *stain soft contact lenses*
- Use **sunscreen** & protective clothing (photosensitivity)
- Men on sulfasalazine: reversible ↓ sperm count / infertility
- Drink 2–3 L water daily

REPORT IMMEDIATELY

- *Rash, blisters, mouth sores, fever* → SJS
- *Sore throat, easy bruising/bleeding, fatigue* → blood dyscrasia
- *Yellow skin/eyes, dark urine* → hepatotoxicity
- *↓ Urine output, blood in urine, flank pain* → nephritis
- *Severe epigastric pain radiating to back* → pancreatitis
- *Worsening bloody diarrhea* → intolerance syndrome / flare

09 NCLEX TEST TRAPS ⚠ HIGH-YIELD DISTRACTORS

- **TRAP** 5-ASA drugs are **NOT immunosuppressants** — do not confuse with biologics (infliximab) or corticosteroids
- **TRAP** **Sulfa allergy ≠ contraindication to mesalamine** — only sulfa*salazine* contains sulfapyridine
- **TRAP** **ASA/salicylate allergy = contraindication to ALL 5-ASAs** (class-wide cross-reactivity)
- **TRAP** Orange urine is *expected*, not toxicity — don't hold the drug
- **TRAP** 5-ASA is for **mild-to-moderate UC only** — NOT for severe flare (use IV steroids/biologics)
- **TRAP** **Paradoxical worsening** of colitis = *mesalamine intolerance syndrome*; looks like a flare but requires STOPPING the drug
- **TRAP** Enteric-coated tablets **must never be crushed** — destroys site-specific release
- **TRAP** Nephritis can occur *at any time* — not dose-related, not early-only

10 MEMORY BOOSTERS MNEMONICS

"5 ORGANS AT RISK" — KLBPH

K **K**idneys → interstitial nephritis
L **L**iver → hepatotoxicity
B **B**lood → dyscrasias
P **P**ancreas → pancreatitis
H **H**eart → peri-/myocarditis

"SULFA" — SULFASALAZINE-SPECIFIC

S **S**kin reactions (SJS, photosensitivity)
U **U**rine orange (harmless)
L **L**ow sperm count (reversible)
F **F**olate deficiency → supplement
A **A**granulocytosis / Aplastic anemia

PATTERN RECOGNITION

• Mesalamine brands rhyme: *Asa*col, Pent*asa*, Lial*da*, Ap*riso* — all contain 5-ASA
• "If it ends in -salazine or -salazide, think **colon-targeted prodrug**"

MANDATORY FINAL SECTION · NCJMM CLINICAL JUDGMENT

Clinical Judgment *Snapshot*

#1 PRIORITY RISK

Interstitial nephritis — silent, progressive, irreversible if missed

Mesalamine-induced renal injury is idiosyncratic and can occur at any dose, at any time. Baseline + serial creatinine and urinalysis are non-negotiable.

WHAT HARMS FIRST?

Hypersensitivity reaction — SJS/TEN or anaphylaxis in ASA- or sulfa-allergic patients

Rash + fever + mucosal lesions after a 5-ASA dose = dermatologic emergency. Cross-sensitivity with aspirin applies to the **entire** class.

FIRST NURSING ACTION

Screen for salicylate & sulfa allergy — **before** the first dose

Then verify baseline renal & hepatic labs. In a flare scenario with new rash/fever → **HOLD the dose, notify HCP, stay with the patient** — do not medicate first.

5-AMINOSALICYLATES · NCLEX-RN PHARMACOLOGY CARD

STUDY · SYNTHESIZE · SUCCEED