

1/ 📢 Hey #NephTwitter, today we will discuss the kidney diseases associated with inflammatory bowel disease (IBD)

Let's begin with a quiz, what is the prevalence of the renal involvement in IBD?

- 5-10%
- 6-18%
- 4-23%
- 15-30%

2/ ✅ The correct answer is 4-23%

Let's begin our discussion on the renal involvement in IBD. Check on the blog by @aamirsaeed44441 and @sabarivenus at KI reports community:

<https://www.kireportscommunity.org/post/common-kindling-inflammatory-bowel-disease-associated-with-kidney-disease>

3/ What is IBD?

- 🔥 A group of chronic immune-mediated disorders of the GIT- includes Crohn's disease (CD) and ulcerative colitis (UC)
- 🔥 Driven by dysregulation of intestinal T cells; gut microbiota dysbiosis plays an important role
- 🔥 Prevalence of extraintestinal manifestations: **5-50%**



Figure 1. Extraintestinal complications of inflammatory bowel disease.

4/ Coming back to our question,

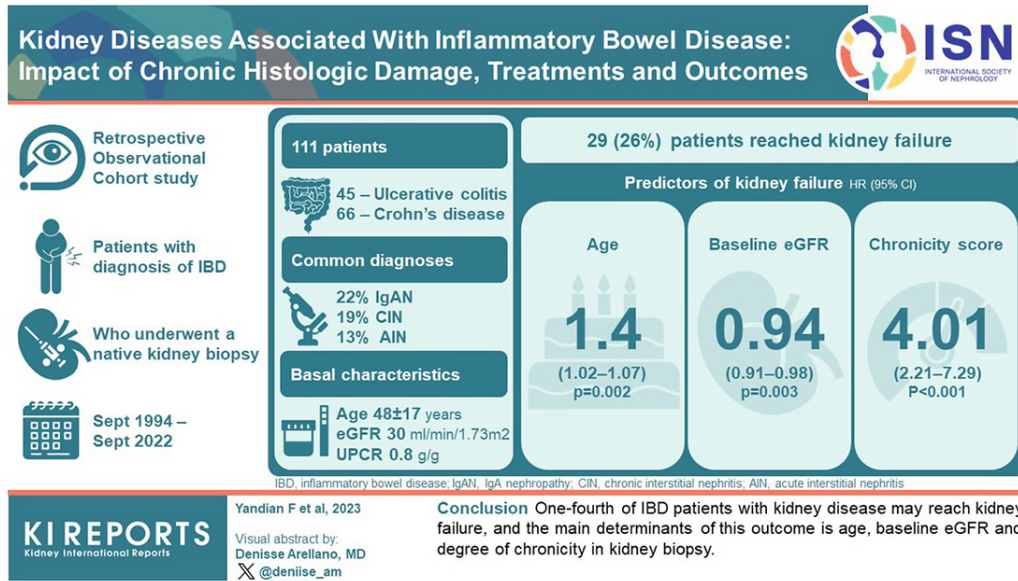
✅ IBD is frequently associated with kidney diseases (**4-23%**)

🔗 Renal manifestations include - **glomerulonephritis, acute/chronic tubulointerstitial nephritis, and amyloidosis**

🔄 Pathogenesis- immune system dysregulation

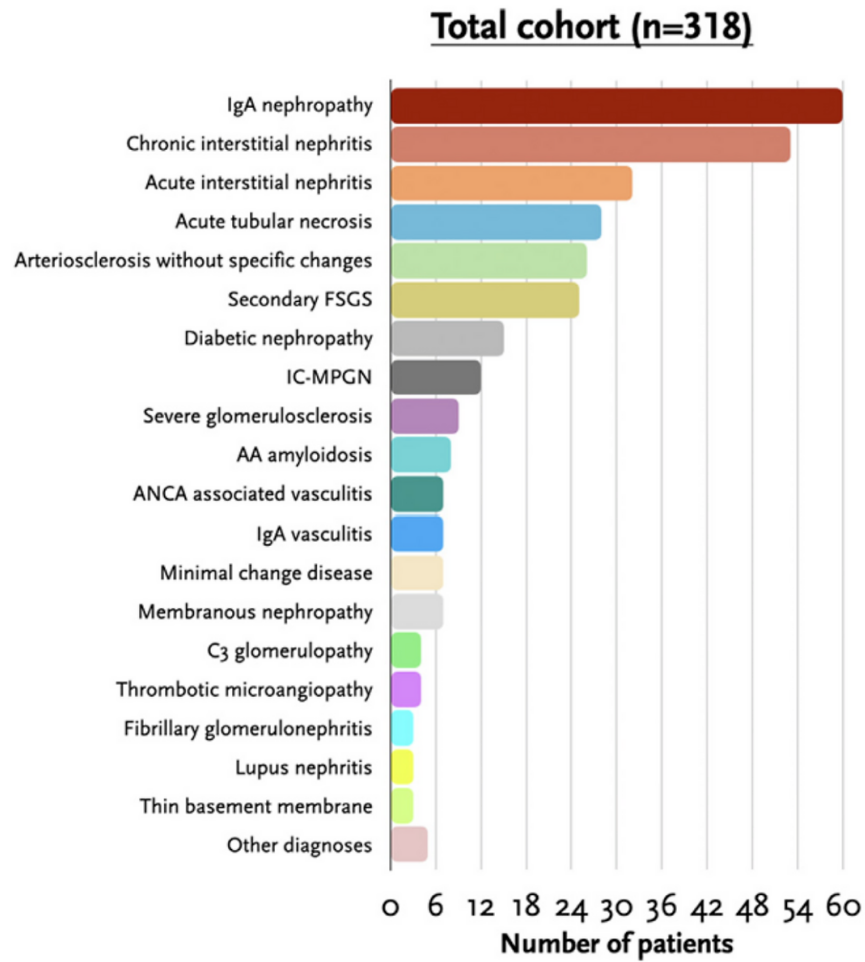
VA by @deniise_am

<https://www.kireports.org/action/showPdf?pii=S2468-0249%2823%2901599-1>



5/ Renal findings:

- 🔍 Hematuria is frequent
- 🔍 Most common glomerular pathology- **IgA nephropathy**
- 🔍 Others: acute and chronic tubulointerstitial nephritis, arterionephrosclerosis, acute tubular injury, and focal segmental glomerulosclerosis



<https://www.kireports.org/action/showPdf?pii=S2468-0249%2823%2901599-1>

6/ 🔥 Let's review another wonderful infographic on renal manifestations in IBD

<https://www.kireportscommunity.org/post/common-kindling-inflammatory-bowel-disease-associated-with-kidney-disease>

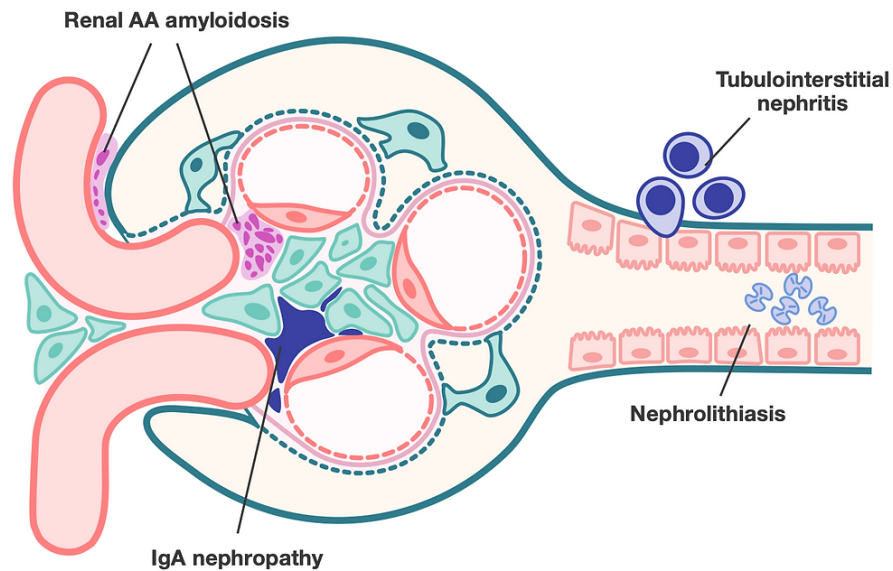


Figure 2. Renal complications of inflammatory bowel disease.

7/ How do we treat glomerular diseases in IBD?

📈 Monitor eGFR during treatment with 5-ASA, calcineurin inhibitors and/or tumor necrosis factor-alpha inhibitors

💊 Additional immunosuppressive: mycophenolate mofetil, rituximab and azathioprine

8/ What is the most common glomerular disease on biopsy?

🔬 IgAN

🌍 Prevalence - **19-22%**

🧬 Presence of HLA-DR1 in IgA nephropathy and HLA-DR1/DQw5 in Crohn's disease links both diseases

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3913236/>

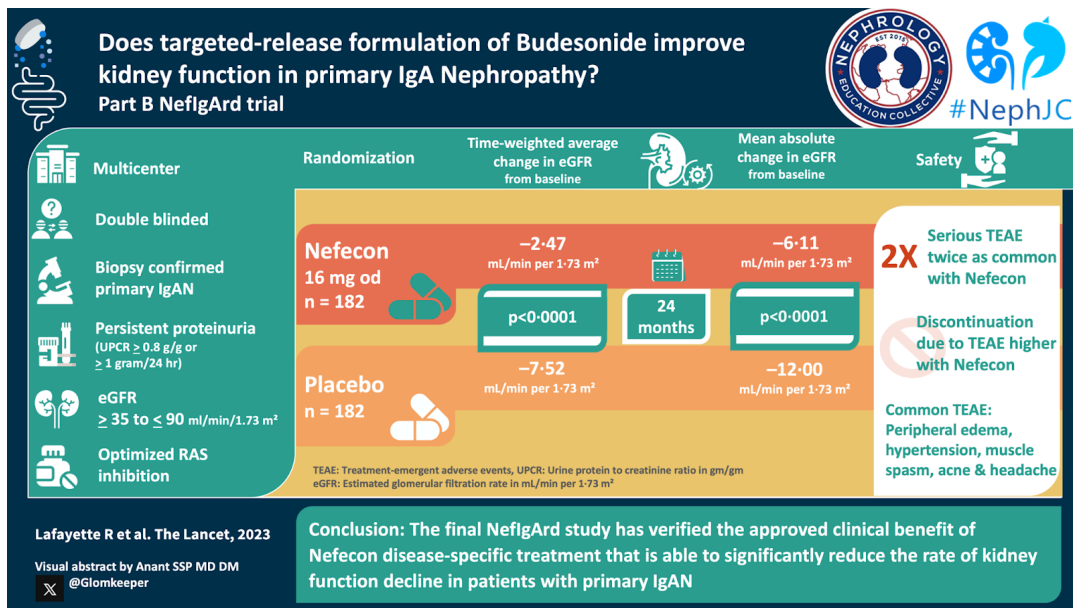
9/ How to treat IgAN with IBD?

💊 Treatment with target-release **budesonide** in both IBD and IgAN ✅

💊 **Nefigard trial on patients with IgAN**: A 9-month treatment with budesonide ⬇️ eGFR decline and a durable ⬇️ in proteinuria versus placebo

VA by @Glomkeeper

<https://pubmed.ncbi.nlm.nih.gov/37591292/>



10/ What are the next frequently diagnosed kidney biopsy findings in IBD?

AIN and CIN

Treatment with 5-ASA in IBD are frequently associated with AIN (51%) and CIN (71%)

11/ AIN/CIN usually present with slow subacute rise in serum creatinine; a high index of suspicion is needed for diagnosis

- ❖ Kidney biopsy is helpful
- ❖ Discontinuing 5-ASA and addition of prednisolone may show partial improvement in AKI

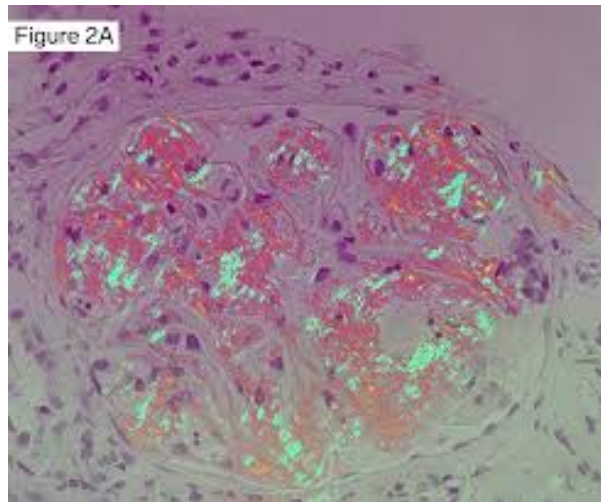
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10851004/>

12/ How common is renal **AA amyloidosis** in IBD?

- Rare, but fatal condition
- 1.3-10.9% (CD), 0.7% (UC)
- Usual presentation- nephrotic range proteinuria
- Can rapidly progress to renal failure

13/ Renal biopsy- Congo red (bright apple green) positive fibril deposition within the glomerulus @arkanalabs

<https://www.arkanalabs.com/case-3-a-chameleon-in-green/>



Early diagnosis improves patient prognosis

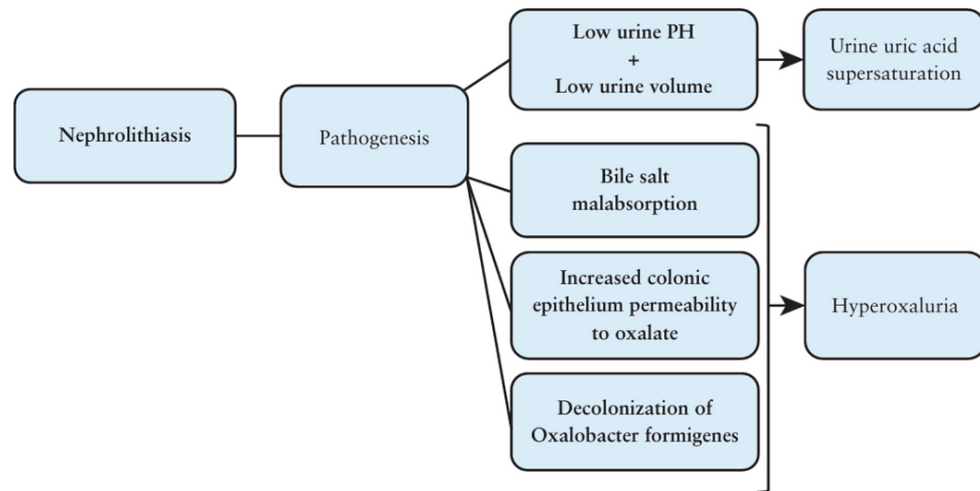
14/ How common are **urologic** complications in IBD?

- ◆ 12–28% nephrolithiasis
- ◆ Urolithiasis, intestine-ureteral fistulas, and ureteral obstruction are common
- ◆ Predominant stone type- calcium oxalate and uric acid stones

15/ Pathophysiology of urolithiasis:

- 🔄 Hypovolemia (diarrhea)
- ✅ urine supersaturation related to low urine volume and altered urine pH (uric acid stones)
- 📈 increased intestinal oxalate absorption causing hyperoxaluria (calcium oxalate stones)

<https://www.kireportscommunity.org/post/common-kindling-inflammatory-bowel-disease-associated-with-kidney-disease>



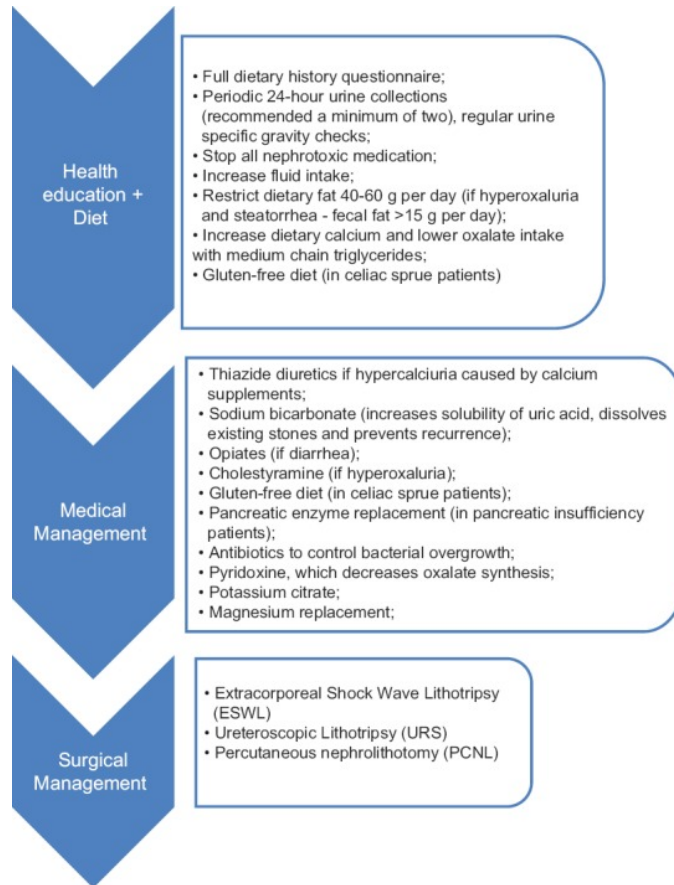
16/ 🪨 Increased risk of kidney stone formation

- 🔴 Patients with IBD-related surgeries (i.e. total colectomy, intestinal bypass, small bowel resection)
- 🔴 Extensive ileocolonic involvement

17/ How to prevent kidney stones in IBD?

- ⬆️ Hydration
- ⬇️ Oxalate intake
- ✅ Urinary alkalinisation

<https://pubmed.ncbi.nlm.nih.gov/27453651/>



18/ What are the predictors of progressive kidney failure?

► Older age, lower baseline eGFR, nephrotic range proteinuria, and more severe anemia

🔬 Histology does not determine prognosis

19/ There is ⬆️ risk of kidney failure with:

⬆️ more glomerulosclerosis

🔬 interstitial fibrosis tubular atrophy

🚫 arteriosclerosis

<https://pubmed.ncbi.nlm.nih.gov/26223844/>

20/ To conclude,

🌟 **Renal** complications in IBD are less frequent but have grave prognosis

🌟 Patients with IBD should undergo **routine surveillance** of renal function and serum electrolytes

🌟 **Active monitoring** of kidney disease is recommended in all IBD patients

21/ This has been a tweetorial by @KajareeG and @DrNikhilJ1 from NephEdC 2024 Pod 1 **Filtrate Firebolts** 🔥 Special thanks to @Sophia_Kidney, @Brian_rifkin, @NephroSeeker and @MChanMD for their help and feedback, and to @KIReports for the opportunity.