🔔Tweetorial Alert 🔔

1/
Hey #NephTwitter!
Welcome to a 🆕 #tweetorial #xtorial brought to you by @KIReports.

2/
Our author is Melvin @MChanMD (pediatric nephrologist)
Our topic: Understanding how immune-complex glomerulonephritis and complement 3 glomerulonephritis affects post-transplant course

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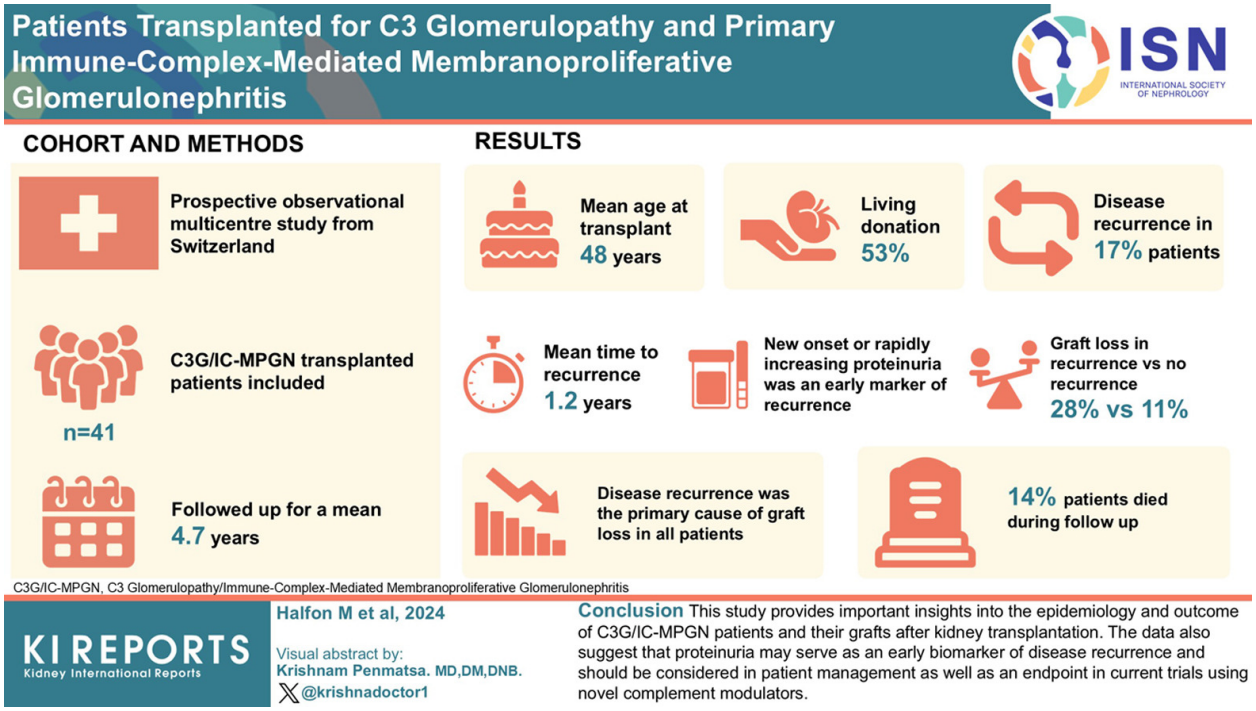
3/
There are no conflicts of interest. Please also check out #KIReportsCommunity educational #blogposts at https://www.kireportscommunity.org/. FOLLOW US at @KIReports for more expert #MedEd in #kidneydisease. #FOAMed @MedTweetorials

4a/ Make sure to check out this amazing review article by @Ghobby on this topic.
👉

15 4b/ @Ghobby's review article and this #Tweetorial is based on these recent publications:
🔪https://www.kireports.org/article/S2468-0249(24)01966-1/fulltext

@krishnadoctor1 provides a sneak preview into this study:



5/ Introduction
🔬High rates of C3G/IC-MPGN progressing to kidney failure requiring transplant.
🔬Prior studies on post-transplant course have been retrospective and used the older classification system.

6/ Methods
ℹ️Swiss Transplant Cohort Study 🇨🇭(a registry of all solid organ transplants)
➡️Adult patients with kidney transplants between 2008-2021
❌Pediatric patients, previous transplants, multi-organ transplants

7/ Study End-Points
🥇Graft loss or graft dysfunction (defined by death-censored graft loss, less than 30mL/min/1.73m2, proteinuria greater than 1g/d)
🥈Rejection episodes and patient survival

Recurrence must be biopsy proven

17 8/ Results
🎯No difference in sex, cardiovascular comorbidities, living/deceased transplant, dialysis time, donor age, induction or maintenance immunosuppressants.
🎯C3G patients were younger than ICGN.
🎯No differences in primary outcome for C3G/ICGN vs other causes.

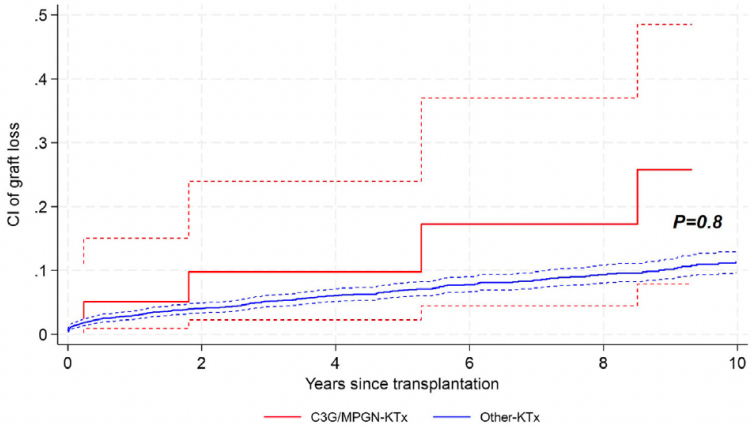


Figure 1. Cumulative incidence of graft loss over time, comparing 41 patients transplanted for C3 glomerulopathy and primary immune complex-mediated membranoproliferative glomerulonephritis and 2590 kidney transplant recipients transplanted for other causes. Full red line: cumulative incidence of graft loss for patients transplanted for C3 glomerulopathy and primary immune complex-mediated membranoproliferative glomerulonephritis (C3G/MPGN-KTx); dashed red lines: 95% confidence intervals. Full blue line: cumulative incidence of graft loss for patients transplanted for other causes (Other-KTx); dashed blue lines: 95% confidence intervals. CI, cumulative incidence; KTx, Kidney transplantation.

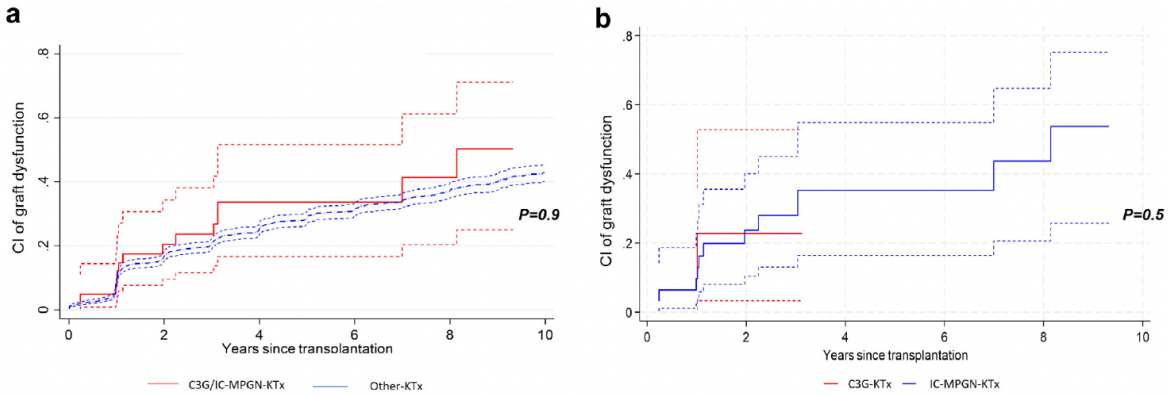


Figure 2. Cumulative incidence of graft dysfunction over time, comparing 41 patients transplanted for C3 glomerulopathy and primary immune complex-mediated membranoproliferative glomerulonephritis and 2590 kidney transplant recipients transplanted for other causes. (a) Comparison between the whole cohort and patients transplanted for C3 glomerulopathy and primary immune complex-mediated membranoproliferative glomerulonephritis. Full red line: cumulative incidence of graft dysfunction for patients transplanted for C3 glomerulopathy and primary immune complex-mediated membranoproliferative glomerulonephritis (C3G/MPGN-KTx); dashed red lines: 95% confidence intervals. Thick dashed blue line: cumulative incidence of graft dysfunction for patients transplanted for other causes (Other-KTx); thin dashed blue lines: 95% confidence intervals. (b) Comparison between patients transplanted for C3 glomerulopathy ($n = 10$) and patients transplanted for primary immune complex-mediated membranoproliferative glomerulonephritis ($n = 31$). Full red line: cumulative incidence of graft dysfunction for patients transplanted for C3 glomerulopathy (C3G-KTx); dashed red lines: 95% confidence intervals. Full blue line: cumulative incidence of graft dysfunction for patients transplanted for primary immune complex-mediated membranoproliferative glomerulonephritis (IC-MPGN-KTx); dashed blue lines: 95% confidence intervals. CI, cumulative incidence; KTx, kidney transplantation.

18 9/ Results

🔥17% of patients had disease recurrence, with a mean time of 1.2 years from transplant.

🔥C3G patients had a non-significant earlier time of recurrence than ICGN.

🔥Proteinuria was sensitive in detecting recurrence.

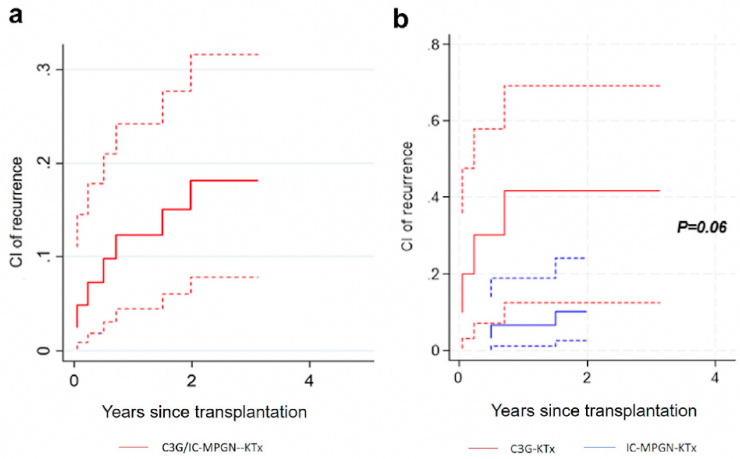


Figure 3. (a) Cumulative incidence of recurrence of disease over time, among 10 patients transplanted for C3 glomerulopathy and 31 patients transplanted for primary immune complex-mediated membranoproliferative glomerulonephritis. (b) Full red line: cumulative incidence of recurrence for patients transplanted for C3 glomerulopathy (C3G-KTx); dashed red lines: 95% confidence intervals. Full blue line: cumulative incidence of recurrence for patients transplanted for primary immune complex-mediated membranoproliferative glomerulonephritis (IC-MPGN-KTx); dashed blue lines: 95% confidence intervals. KTx, kidney transplantation.

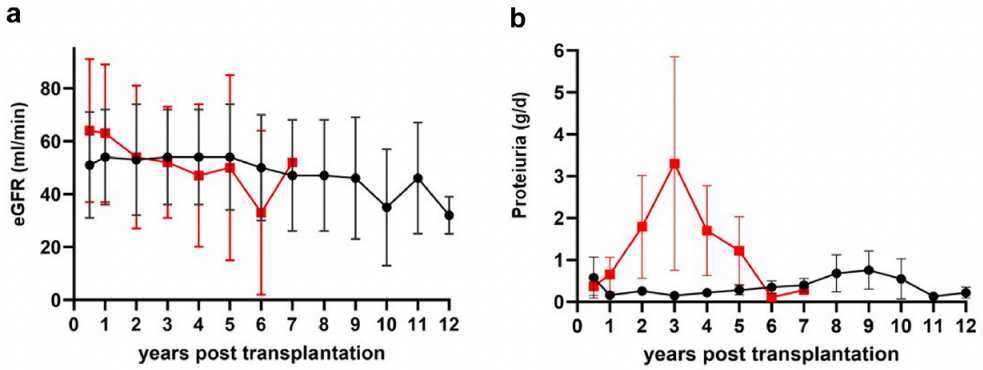


Figure 4. Evolution of (a) kidney function and (b) proteinuria during follow-up, comparing recurrent and nonrecurrent C3G/IC-MPGN kidney transplant recipients. Red squares and line: recurrent group; black dots and line: non-recurrent group. C3G, C3 glomerulopathy; IC-MPGN, immune complex-mediated membranoproliferative glomerulonephritis.

19 10/ Results

🔥Patients with recurring disease were twice as likely to have received immunosuppressive therapy before transplantation (p=0.2)

🔥Cumulative risk of graft dysfunction is approximately 50% higher in those with recurring disease than non-recurring (p=0.07)

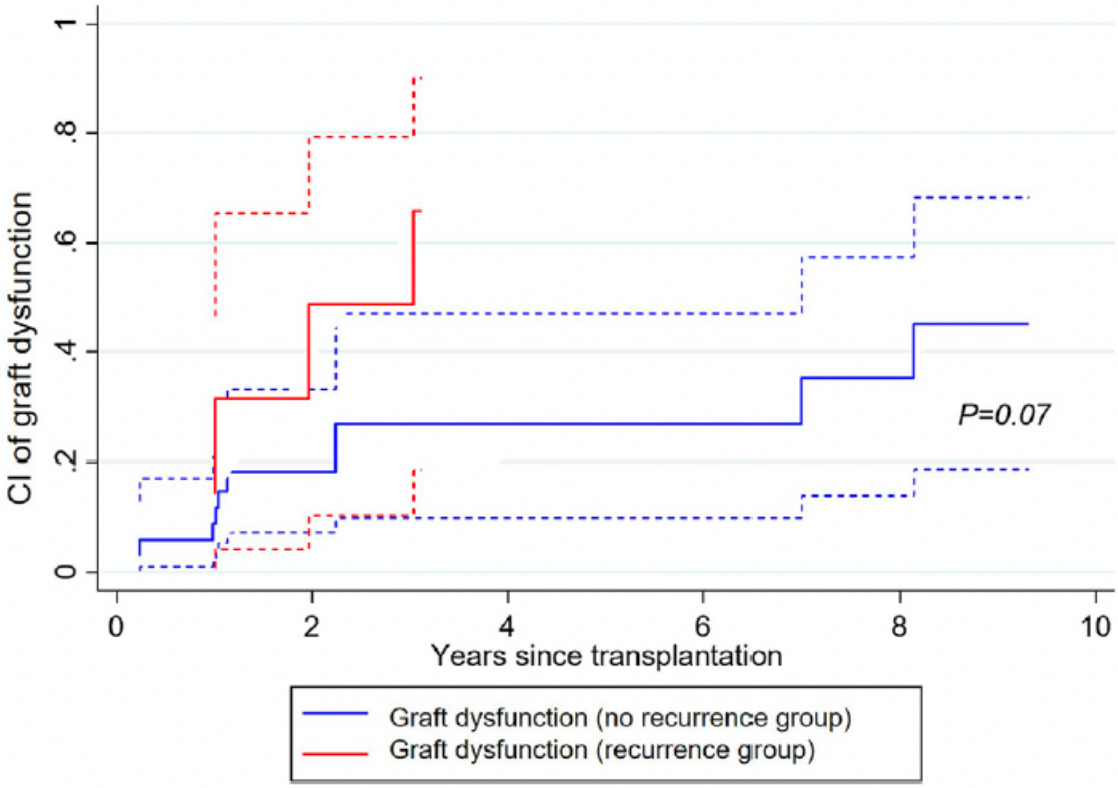


Figure 5. Cumulative incidence of graft dysfunction among 41 patients with recurrent and non-recurrent C3G/IC-MPGN after kidney transplantation. Full red line: cumulative incidence of graft dysfunction for the recurrent group; dashed red lines: 95% confidence intervals. Full blue line: cumulative incidence of graft dysfunction for the non-recurrent group; dashed blue lines: 95% confidence intervals. C3G, C3 glomerulopathy; CI, cumulative incidence; IC-MPGN, immune complex-mediated membranoproliferative glomerulonephritis.

11/

Strengths

💪Multi-center retrospective study

💪Cumulative incidence model

Limitations

🥱Small sample size

🥱No data on specific immunosuppressants prior to transplantation

😉Lack of genetic information
😉No protocolized biopsies at defined time points

12/ Key Learning Points
🔑Disease recurrence is high in transplant patients with C3G/ICGN, with risk factors including prior immunosuppression before transplant.
🔑Proteinuria is a good marker of disease recurrence.

13/ Now let's see if you have learned something!

What is a good marker of disease recurrence in transplant patients?
1. Hypertension
2. Proteinuria
3. Hematuria

14/ The answer is Proteinuria. We hope this #tweetorial has "complemented" your knowledge on C3G and ICGN. Please share this #tweetorial with your followers and friends! Thanks to @MChanMD for authoring & @Brian_Rifkin @sophia @nephroseeker for great feedback! #FOAMed #nephtwitter @ISNkidneycare @KIReports