Xerostomia evaluated with the modified Schirmer test and renal replacement therapy initiation: is there a connection?

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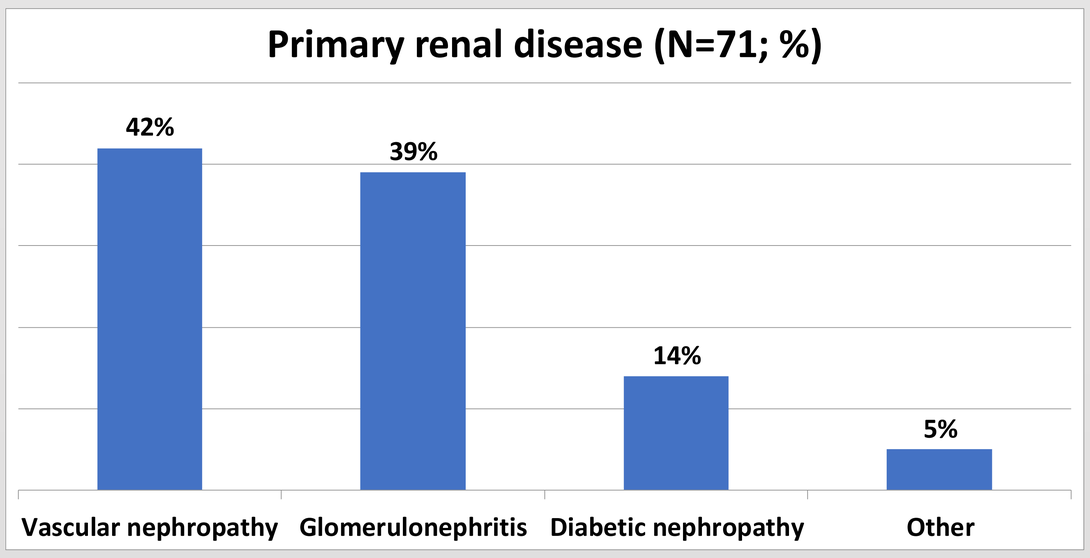
BACKGROUND

Xerostomia, defined as the feeling of dry mouth, is often underestimated by nephrologists and has been poorly studied in predialysis chronic kidney diseases (CKD) patients. Therefore, we aimed to study xerostomia and its impact on renal replacement therapy initiation in non-dialysis CKD patients using a *modified Schirmer test* (ST).

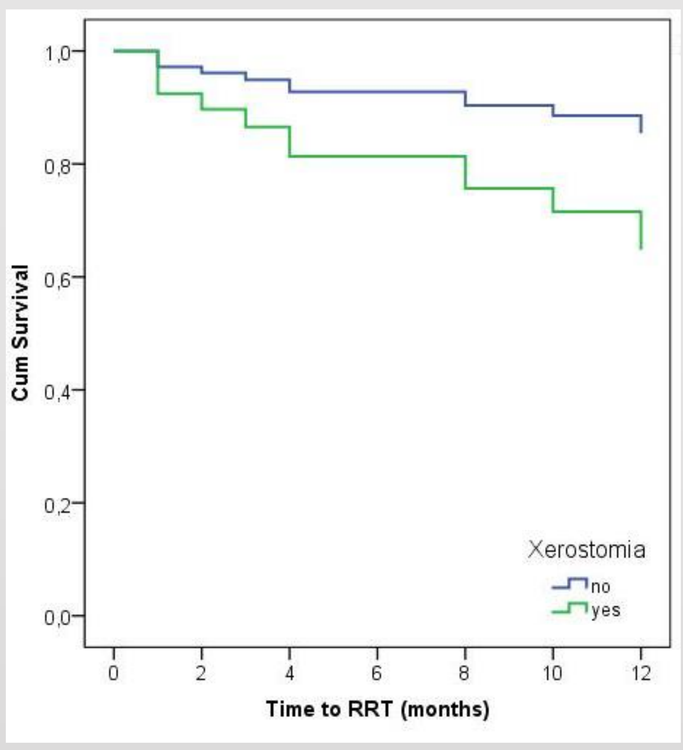
METHODS

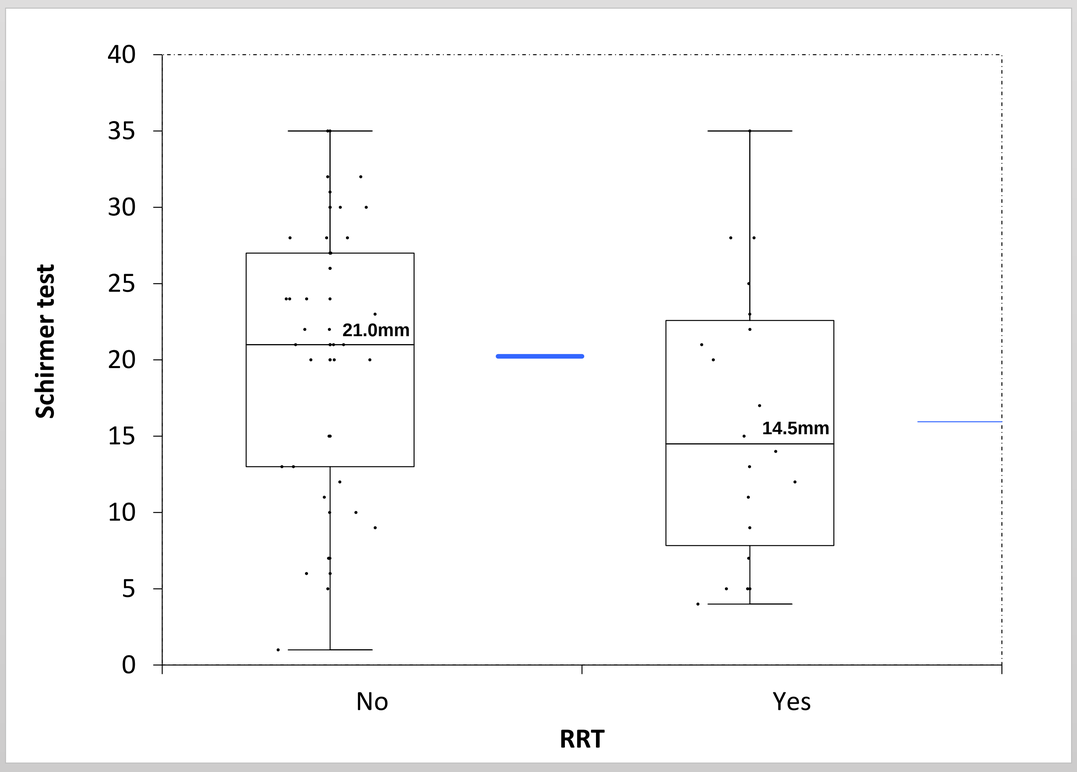
- Prospective cross-sectional, single center study on 71 adult CKD patients, enrolled in a 13 months period.
- **Inclusion criteria**: CKD, the presence of edema, overhydration
- **The endpoint:** RRT initiation
- For each patient we obtained a detailed **history of xerostomia-inducing drugs**
- **Hyposalivation** was defined as less then 25 mm movement of the blue dye at 3 min.
- Data are presented as mean/median (according to distribution) and 95% confidence interval or percentage.
- Mann-Whitney U test and Chi-square test were used. Variables related to outcome were further evaluated in a multivariate Cox proportional hazard (CPH) models.

RESULTS



- **Age 64.3 (61.4, 67.3)yrs.**
- **eGFR 27.6 (19.6, 36.6) mL/min**
- **ST positive in 66% of pts.**





Adjusted (see table) renal survival for patients with xerostomia (xerostomia defined as >median) - (HR 0.36 (95%CI 0.11, 1.17) p=0.09)

Variable	HR (95% CI)	p
Age (years)	0.99 (0.95, 1.04)	0.9
MAP	0.99 (0.95, 1.03)	0.8
Serum albumin	3.00 (0.92, 9.77)	0.06
Hemoglobin	0.84 (0.62, 1.15)	0.2
eGFR	**0.94 (0.89, 0.99)**	**0.02**
24h proteinuria	**1.20 (1.03, 1.40)**	**0.01**
OH	0.94 (0.79, 1.11)	0.4
Schirmer test	**0.91 (0.85, 0.98)**	**0.01**
Drug inducing xerostomia	0.67 (0.22, 1.99)	0.4

Patients who started RRT had a significantly lower ST (14.5 (9.0, 22.0) vs. 21.0 (20.0, 24.0) mm; p=0.03)

Determinants of renal survival (Cox regression analysis)

CONCLUSION

- Xerostomia evaluated with by the modified Schirmer test together with eGFR and proteinuria predicted the RRT initiation.
- Xerostomia could reflect the toxicity of the uremic milieu and may increase the risk of paradontosis, cavities, mucosal lesions, loss of taste, dysphagia and infection, which justify an increased attention to oral care in CKD patients.
- As we evaluated only hyperhydrated patients, studies addressing patients irrespective of hydration status are needed to confirm our data.

REFERENCE:

•Kumar NN, Panchaksharappa MG, Annigeri RG. Modified schirmer test--a screening tool for xerostomia among subjects on antidepressants. Arch Oral Biol. 2014 Aug;59(8):829-34. doi: 10.1016/j.archoralbio.2014.05.008. Epub 2014 May 13.

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