Uraemic pruritus in RDT patients: is it still a problem?

Sir,

We read with interest the article by Pisoni et al., concerning pruritus in HD patients from an international study (DOPPS) [1]. The authors reported a high prevalence of pruritus in the dialytic population, with a wide variability among different units (10–70%) and countries (36–50%). Although many factors were related to uraemic pruritus, there was no definite conclusion drawn as to the pathogenesis of this symptom, and the large difference in its prevalence among the different countries was not explained by a comprehensive adjustment of many parameters.

In our unit, among the 78 patients (age 66 ± 14 years, vintage 70 ± 67 months) on extracorporeal RDT, all undergoing online HDF, 28 patients (36%) had complained of generalized pruritus either continuously or close to the session in some periods while on dialysis. Pruritus disappeared in every patient by stopping antibiotics or aspirin or ticlopidine ($n = 13$), by avoiding fixed dressings for fistula needles ($n = 14$), or by avoiding woollen cloth ($n = 1$). No patient complained of pruritus at the time of this investigation in our unit.

In agreement with other authors [2], the present observation suggests that high efficiency and biocompatibility, such as that obtained by online HDF, could decrease dialytic inflammation, and thus the occurrence of pruritus. Moreover, other factors and especially the use of fixed dressings, can cause generalized pruritus beyond the shunt arm.

Therefore, in well-dialysed patients, factors other than uraemia or dialysis can play a role in the pathogenesis and persistence of pruritus in RDT patients.

Renal Unit
Ospedale S. Spirito
Casale Monferrato, Italy
Email: dialisi@asl21.piemonte.it
Marco Gonella
Giovanni Calabrese
Antonio Mazzotta
Giuseppe Vagelli


Note: Dr Pisoni was invited to provide a reply, but we did not receive a response.

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References


Amaury Clozel
Desenzano del Garda
Via Montecroce 14, 25015
Desenzano d/G (BS)

1Divisione di Nefrologia e Dialisi Azienda Ospedaliera Desenzano del Garda Via Montecroce 14, 25015 Desenzano d/G (BS)
2Dipartimento di Nefrologia Università di Parma Via Gramsci 14, 43100 Parma

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Lucio Manenti
Augusto Vaglio

Note: Dr Pisoni was invited to provide a reply, but we did not receive a response.

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Urinary pH affects albumin concentrations after prolonged frozen storage

Sir,

Albuminuria is used as a predictor of events in many epidemiological studies and as an intermediate end-point in clinical trials. We have recently shown that frozen storage results in assessment of falsely low urinary albumin concentrations (UAC), particularly in the reference and microalbuminuric range (UAC 0–200 mg/l) [1]. If samples were subjected to hand inversions or vortex-mixing prior to assessment, UAC remained almost unchanged (2.6–5.3% decrease) after 3–5 months of storage, whereas the difference increased to −25% if samples were stored for 18–24 months.

It has been suggested that urinary pH is a determinant of the decline associated with freezing, but to the best of our knowledge, there is only one study that has actually investigated this issue. In this study, Erman et al. [2] found no association between urinary pH and changes in UAC after 7 days of storage at −20°C. We investigated whether urinary pH is a determinant of changes in UAC after storage at −20°C for 4 and 12 months.

Urine samples (UAC > 5 and UAC < 200 mg/l, n = 230) were collected by participants during the third screening stage disease (PREVEND) study (www.PREVEND.org). pH was measured by Combur strips (pH range 5–9, expressed as integers). UAC was assessed by immunonephelometry (Dade Behring, Germany) in fresh urine samples and after frozen storage in polypropylene aliquots. Samples were subjected to hand inversions and centrifugation prior to assessment.

Median UAC (interquartile range) was 10.7(7.3; 51.3) mg/l in fresh samples at baseline. Urinary pH was 5 in 38%, 6 in 44%, 7 in 15% and 8 in 3% of cases. After 4 months of storage, the change in UAC was −29(−59; −8)% at pH 5, −20(−56; 2)% at pH 6, −10(−48; 2)% at pH 7 and −6(−38; −5)% at pH 8 (P < 0.001 for trend). The results for 12 months of storage are shown in Figure 1. We conclude that urinary pH affects the magnitude of decline in UAC after prolonged frozen storage. The mechanism underlying this observation may involve increased aggregation and denaturation of albumin at relatively low pH, because of the isoelectric point of albumin at pH 4.7. One study has been performed in which urinary pH was adjusted before storage at −20°C [3]. In this study, pH was adjusted to 7, and storage was for 8 weeks. Results were nevertheless promising: there was no significant decrease after adjustment of pH, while UAC decreased significantly in unadjusted samples. Adjustment of pH may be a feasible option for better preservation of urine samples that are meant to be stored for a prolonged period before assessment of albumin.

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Department of Medicine

Jacoline W. Brinkman
University Medical Center Groningen and
Dick de Zeeuw
University of Groningen
Email: s.j.l.bakker@int.umcg.nl
Stephan J. L. Bakker


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