

Uremic Pruritus in Patients with End Stage Renal Disease, in Ibadan, Nigeria

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ABSTRACT

Pruritus is a disabling symptom in patients with chronic renal failure. There are no reports of this symptom in patients with renal failure in our environment. We looked at the prevalence and pattern of pruritus in patients with end stage renal disease and underlying associated cutaneous features in them. Questionnaire assessing the presence, pattern, severity and sites affected with pruritus were administered to the patients with end stage renal disease. Their skin was examined for associated clinical features. One hundred and twenty patients with end stage renal disease where recruited in to the study. Thirty two (26.7%) of the patients had pruritus out of which 22 were males. Twenty one (65.6%) of the patients were receiving haemodialysis while the others were on conservative management. The age range of the patients was 22-78 years with a mean of 42.96 ± 15.83 years. Pruritus was generalised in 75% of the patients. It was localised to the face in 6%, upper limbs 3%, lower limbs 9%, scalp 3% and the trunk in 3% of the patients. Xerosis was found in 80% of the patients with generalized pruritus. We concluded that pruritus is a symptom of end stage renal disease in this environment and occurs more in patients receiving haemodialysis. Most of our patients had mild to moderate pruritus. Xerosis was an accompanying feature of generalised pruritus in these patients.

Keywords: *Uremic pruritus, End Stage Renal disease*

INTRODUCTION

Pruritus is a common symptom of end stage renal disease and is also known as uremic pruritus or renal itch. Although commoner in patients on haemodialysis [1, 2, 3] it is also seen in patients on conservative management for ESRD [1, 4]. Once it starts, it usually becomes persistent until there is renal transplantation [5]. Associated skin changes seen in the patients include xerosis (dryness of the skin) or complications of pruritus itself such as excoriation, lichenification and impetiginisation of the skin [2].

The pathogenesis of uremic pruritus is still not clear but appears to be multifactorial. A variety of factors have been suggested for its aetio-pathogenesis. They include secondary hyperparathyroidism [6], mast cell proliferation and degranulation [7], pruritogenic cytokines [8], deranged divalent ion metabolism [9], defective sweating [10] and abnormal pattern of cutaneous innervations [11]. None of these studies have found these factors to be major or universal. However, atrophy of the sebaceous glands and the secretory and ductal portions of the eccrine sweat glands have been demonstrated in patients with end stage renal disease [12]. These results in lower surface lipids and a reduction in the water content within the stratum corneum possibly contributing to pruritus. Significantly less hydration of the stratum corneum in pruritic dialysis patients has been demonstrated [13]. Recently, the role of inflammation and pro inflammatory factors on the

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occurrence of pruritus indicate that uremic pruritus may be a systemic phenomenon due to dysfunctional regulation of immunologic parameters [14].

We looked at the prevalence and pattern of pruritus in patients with end stage renal disease the University College Hospital Ibadan Oyo State.

MATERIALS AND METHODS

One hundred and twenty patients diagnosed with ESRD who gave their consent were included in the study. A questionnaire was administered by the investigators. This was to assess the relevant bio-data, presence, pattern and severity of the pruritus in the patients. Uremic pruritus was defined as pruritus around the period of the present illness without any other obvious reasons. Patients with pruritus were examined. Patients with known pruritic dermatoses were excluded from the study.

RESULTS

One hundred and twenty patients with end stage renal disease were recruited in to the study. Thirty two (26.7%) of the patients had pruritus out of which 22 were males. Twenty one (65.6%) were receiving haemodialysis while the others were on conservative management. The age range of the patients was 22-78 years with a mean of 42.96 ± 15.83 . There was no correlation between age, sex, duration of treatment and pruritus. Pruritus was generalised in 75% of the patients, localised to the face in 6%, upper limbs 3%, lower limbs 9%, scalp 3% and the trunk in 3% of the patients. Xerosis was found in 80% of the patients with generalised pruritus.

DISCUSSION

Pruritus is one of the commonest symptoms in patients with ESRD especially in those on dialysis. Prevalence rates vary between 12-90% in patients with chronic renal failure [15, 16]. It would appear that higher prevalence rates about 40% and above have been reported in those on continuous dialysis. Figures as low as 12% was recorded in Senegal where a significant number of patients were unable to afford dialysis [15]. Twenty seven percent of our patients had pruritus and this occurred more in patients on haemodialysis. It has been suggested that the haemodialysis itself may contribute to the pruritus or prolong the lives of patient long enough for the pruritus to develop [1, 4]. During dialysis it is believed that several cytokines including interleukin-1 are released following contact with plasma and the dialysis

membrane[8]. Interleukin 1 has been postulated to induce the release of potentially pruritogenic substances [17]. It was earlier suggested that accumulation of non-dialyzable middle molecules in haemodialysis patient stimulated free nerve endings contributing to pruritus [18].

Although haemodialysis and continuous ambulatory peritoneal dialysis (CAPD) have been found to contribute to uremic pruritus, CAPD contributes 10-14% less (the contribution of CAPD is 10 – 14 % less than HD). This may result from a more effective elimination process of possible pruritogenic substances by the peritoneum when compared to the artificial membranes in haemodialysis [7]. Most studies had reported development or worsening of pruritus during dialysis or on the day after dialysis, only one of our patients had worsening of pruritus 12 hours after dialysis. We were not sure if this was due to the small number of patients we had on dialysis. Virtually most studies have reported no correlation between age, sex and duration of treatment and pruritus. This was also our experience in this study.

In 75% of our patients, pruritus was generalised and of mild - to moderate- intensity in 97% of the patients. Generalised pruritus appears to be a common finding in most studies [1, 2, 3]. A report from Israel had 70 % of patients with generalised pruritus with 50% [19] moderate intensity while those in Morocco had 65.7% of their patients with generalised pruritus and 78.3% with mild intensity [20]. Localised pruritus appears to be less common.

Amongst patients that had pruritus, 80% of them had xerosis (dry skin). Other studies had reported prevalence rates of xerosis of 66.6% to 93.1% [3, 21] in patients with uremic pruritus. Some studies showed a correlation between severity of pruritus and xerosis while others did not show any correlation. We did not notice any association between pruritus and severity of xerosis in our study. It has been suggested that the xerosis in these group of patients is due to atrophy of epidermal and dermal appendages [21]. Significantly less hydration of the stratum corneum in pruritic dialysis patients has been demonstrated. Some authors have reported an increase in vitamin A levels and elevated retinol which has been linked with xerosis in patients with ESRD and suggested it may be the aetiology of the pruritus [1]. Other authors have not found an association between vitamin A levels and pruritus in uremic pruritic patients [22].

We found it interesting that none of the patients had complained to their primary physicians about pruritus, possibly because it was not disabling in them.

In conclusion, pruritus is a symptom of end stage renal disease in this environment and occurs more in patients receiving haemodialysis. In most of our patients, pruritus was mild to moderate in severity. Xerosis is an accompanying feature of generalised pruritus in these patients.

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