ORIGINAL ARTICLE

Clinical Characteristics of Uremic Pruritus in Patient Undergoing Hemodialysis

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ABSTRACTS

Objective: To identify various characteristics of uremic pruritus patients undergoing hemodialysis.
Design: Case series
Place and duration of study: This study was conducted at Nephrology ward and Dermatology Department at Sandeman Provincial Hospital Quetta over a period of six months.
Patients and methods: Fifty patients of end stage renal failure undergoing hemodialysis were studied. Characteristics of pruritus like duration, intensity, occurrence, appearance, distribution, area of maximum intensity; effect on and mood were documented. Effects of dry skin, heat, sweating, rest, clothing, tiredness, dialysis, cold, application of lubricants medication & association of pruritus..
Results: Pruritus occurred daily in 90%, weekly 22% and monthly 14% and intractable in 8%. Areas of maximum intensity were legs in 66% and Back 34%. Dry skin and cold environment exacerbated while rest and hot environment a meliorated pruritus.. 76% had sleep problems 34% became agitated, while 18% became depressed patients with pruritus did not differ from those with out it with regard to laboratory parameter or use of medication.
Conclusion: This study gives us a comprehensive characteristic of uremic pruritus which may be useful guideline for treating Nephrologists and Dermatologist.
Key words: Uremic Pruritus, Hemodialysis, Chronic renal failure, End stage renal disease

INTRODUCTION

Chronic renal failure (CRF) is a serious medical problem all over the world. Its incidence, prevalence is consistently increasing. Its major cause is diabetes mellitus, followed by chronic glumerulo nephritus, hypertension, polycystic kidney disease, obstructive uropathy and nephrotoxic drugs.[1,2] Pruritus is one of the most common symptoms affecting patients with uremia especially on hemodialysis. The other common symptoms are Nausea, short of breath, fatigue etc. The pathogenesis of uremic pruritus is unclear and is to be caused by several factors .Dialysis is an important trigger of pruritus. Slowly deposited or accumulated pruritogens of uncertain nature are the likely cause. In most of the chronic renal failure patients the parathyroid hormones (PTH) levels are raised which can cause mast cell proliferation in skin leading to release of histamine that itself cause pruritus. Hyperphosphatemia, abnormal patterns of continuous innervations and increased levels of vitamin A have all been associated with uremic pruritus. xerosis is also contributing factor to pruritus.[3,4] Pruritus is a common problem in hemodialysis patients.[5,6]

A comprehensive clinical data is required to plan an effective treatment strategy for management of uremic pruritus, the data regarding its clinical characteristics is sparse especially in our own population. Our study was designed to give a comprehensive data regarding the clinical characteristics of uremic pruritus, so that it could be a useful guideline for the treating nephrologists and dermatologist.

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PATIENTS AND METHODS

This study was conducted at Nephrology and Dermatology Department Sandeman Provincial hospital Quetta. It was carried out over 6 month's duration from January to June 2008. It was a case series. 50 patients of end stage renal disease (ESRD) were included in the study, which were on maintenance hemodialysis. Patients of both sex and all ages with CRF with pruritus caused by an additional disease, or the patients of chronic renal failure, who were taking drugs for pruritus, were excluded from the study. Those CRF patients, who met the inclusion/ Exclusion criteria, were interviewed after obtaining their consent. Associated between pruritus and various laboratory Para meters like mean pre dialysis values of blood urea, creatinine. Uric acid, calcium, phosphorus, hematocrit, alkaline phosphates, bilirubin, PTH, and total heparin dose received during single dialysis procedure were recorded. The intensity of pruritus was assessed as mild (pruritus relieved by rubbing), moderate (relieved by scratching) severe (pruritus accompanied by erosions) and intractable (irresistible desire to scratch

leading to disturbed sleep). Frequency of pruritus, demographic feature of the study group, demographic features of the patients with uremic pruritus, duration of pruritus, appearance of pruritus after the start of dialysis, character, temporal occurrence, intensity, area of maximum intensity, effects upon sleep, mood and distribution of pruritus were noted. The appearance of pruritus was related to the regular use of any medication such as calcium channel Blockers, alpha or beta blockers, angiotensine converting enzyme inhibitors, aspirin, nitrates or a combination of these drugs. The data was obtained from patients by personal interviewing and a preplan proforma was used to record all the relevant information. Descriptive statistics like, duration, relative frequency, aggravating/relieving factors, intensity and location were computed for data presentation.

RESULT

Table 1: Characteristics of uremic pruritus

	Frequency	%age
Duration of pruritus		
More than 1 year	4	8.0
More than 2 years	6	12.0
More than 3 years	40	80.0
Occurrence of pruritus		
Daily	45	90.0
Weekly	3	6.0
Monthly	2	4.0
Appearance of pruritus		
2-3 months after start of dialysis	41	82
2 years of start of dialysis	17	34.0
Intensity of pruritus		
Mild	25	50.0
Moderate	14	28.0
Severe	7	14.0
Interactabe	4	8.0
Characteristics of pruritus		
Intermittent	31	62.0
Continuous	9	18.0
Nocturnal exacerbation	10	20.0
Distribution of pruritus		
Symmetrical	20	40.0
Asymmetrical	30	60.0
Areas of maximum intensity		
Legs	33	66.0
Back	17	34.0
Effect of pruritus on mood		
Agitated	17	34.0
Depressed	9	18.0
Effect of pruritus on sleep		
Difficulty in falling to sleeps	29	58.0
Awakened by pruritus	9	18

Periods of time on dialytic therapy ranged from 2 months to 5 years. All these patients underwent dialysis for a period of 4 hours twice weekly only 6% patients underwent three times in week due to overload of patients. The main dialyzor used was cellulose diacetate (80% of them were 150E (1.5m2) and the rest 103E (1.3m2). Standard purified water was used. In our study the pruritus was present in 27 (54%) cases. Out of these 22 (44%) were male while 28 (56%) were female. The average age of patients with pruritus was 51 years while that of without pruritus was 43% .Pruritus was more common in those patients, who were on maintenance hemodialysis for more than 3 years as compare to one and two years of duration. The majority of the patients 25 (50%) complained of mild degreed of pruritus. The pruritus distributed asymmetrically in most of the cases 30 (60%). During rest pruritus have no effect in 40% cases while it is a meliorating in 34% cases. During dialysis. Majority of the patients, 35 (70%) have no pruritic effect, while in 9 (18%) cases it is exacerbating. After dialysis it is exacerbating in most cases 29 (58%) in our study. During cold pruritus exacerbating in 30 (60%) cases while applying oil to skin pruritus 100% is ameliorating. The results are summarized in Tables 1-2.

Table 2: Characteristics of uremic pruritus aggravating and ameliorating factors

Factors	No effect	Amelio-rating	Exa-cerbating
Dry skin	18 (36%)	-	32 (64%)
Heat	27 (54%)	20 (40%)	3 (6%)
Rest	20 (40%)	17 (34%)	13 (26%)
Sweating	27 (54%)	14 (28%)	9 (18%)
Clothing	36 (72%)	7 (14%)	7 (14%)
Tiredness	46 (92%)	3 (6%)	1 (2%)
During dialysis	35 (70%)	6 (12%)	9 (18%)
Before dialysis	26 (52%)	20 (40%)	4 (8%)
Cold	17 (34%)	3 (6%)	30 (60%)
After dialysis	15 (30%)	6 (12%)	29 (58%)
Medication	50 (100%)	-	-
Laboratory parameters	50 (100%)	-	-
Applying oil to skin	-	50 (100%)	-

DISCUSSION

Uremic pruritus is one of the most common symptom in patients with chronic renal failure. Uremic pruritus was seen in 54% of patients in our study. Pruritus appeared with in 2-3 months of start of dialysis in 41 (82%) cases in our study. Gilchrest[7] and Jackic[8] reported the occurrence of pruritus soon after dialysis in 25% and 19% patients respectively. Robertson[9] in his review reported that pruritus appeared about 6-8 months after the start of dialysis. Conversely the study done by Hirosighe[10] showed that optimal

dialysis improves uremic pruritus so our data and other studies suggest that dialysis may be a trigger for pruritus. The minor difference in the onset of pruritus after dialysis may be related to the nature of the dialysate used. Different frequency rates of pruritus reported are 22%[11], 37.9%[7], 40.8%[12], 40-70%[13] as compare to our study 54% so the frequency rate of uremic pruritus tends to be variable but on the average about 40% patient may be effected. The duration of pruritus tended to be prolonged 40(80%) patients had pruritus for more than three years. Although prolonged, it was not necessarily constant during the duration of dialysis and was free of it at the time of our study. Study of Gilchrest[7] came to the same conclusion. In contrast, Stahle, Backdahl[13] concluded that uremic pruritus tends to be constant during the time on dialysis. These different conclusions can result from differences in sample size and length of follow up. Pruritus was symmetrical in 20 (40%) patients of our study. It involves all part of the body but was more localized to the legs 33 (66%). This is similar to the result obtained by Zucker[14] who reported back (70%) and abdomen (46%) as the most commonly involved area. Subach[15] also reported back and legs as the most common sites. Due to its long duration, frequency and high intensity uremic pruritus is a very bother some symptoms with a great potential to impair the patients life .this was related in some of the patients in our study, 17(34%) patients became agitated and 9 (18%) became depressed as a result of pruritus. In 24 (48%) patient pruritus had no effect on their mood. Zucker et al[14] reported an incidence of 36%, 8% and 52% in patients who were agitated, depressed with no effect respectively. The pruritus occurred daily in most of our patient 45(90%) and was inter mitten and not evenly distributed over the day. It occurred more often and with greater intensity at night in our study. This was also noted by Balaskas[16] this can be attributed to lack of activity typical of this part of the day. The intensity of pruritus in our study was mild in 25(50%) moderate in 14(28%) and severe in 7(14%). Balaskas[17] reported pruritus as mild in 43% moderate in 41% and severe in 14% of their patients undergoing hemodialysis.

CONCLUSION

It is concluded from this study that uremic pruritus was present in up to almost half of the CRF patient under going hemodialysis. Hemodialysis was a common trigger and pruritus usually started with in 3 months of its commencement. In most of the cases the intensity of pruritus was mild, how ever one third of the patients became agitated or depressed as a result of pruritus. It commonly occurred daily and had intermittent character. Half the patients had slept related problem. This study may provide a useful guideline for the treating nephrologists and dermatologist. This study also gives us a comprehensive characterization of uremic pruritus in our own population.

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