EFFECT OF DIALYSIS ON PSORIASIS: A CLINICAL STUDY

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Twenty patients with extensive psoriasis of more than three years duration not responding to conventional medical treatment were studied to assess the effect of dialysis. Ten patients were subjected to haemodialysis and ten to peritoneal dialysis. Patients were periodically assessed regarding response by standard criteria. At the end of six months 4/8(50%) in haemodialysis group and 6/10 (16.6%) in peritoneal dialysis group showed improvement. One patient in haemodialysis group developed exfoliative dermatitis eleven days after onset of dialysis. In this study though a beneficial effect in psoriasis was noted following dialysis, the effect was temporary.

Key words: Psoriasis, Haemodialysis, Peritoneal dialysis

Introduction

The management of psoriasis continues to be an intriguing problem. Various modalities of treatment have been tried and new methods of management are being evolved as we understand the etiopathogenesis of the disease more and more. Mc Evoy and kelly in 1976 reported the incidental disappearance of psoriatic lesions in a patient with chronic renal failure, following haemodialysis. Dialysis in non uremic subjects for psoriasis was first done by Twardowski.[2] A favourable influence on the course of psoriasis with dialysis was reported by Twardowski,[3] Chugh et al,[4] Glinski et al,[5] Halevy et al,[6] and Anderson et al.[7] Relapse after dialysis and appearance of psoriatic lesions de novo during haemodialysis has been reported. A pilot trial of haemo and peritoneal dialysis in psoriatics who had poor response to conventional treatment was planned to assess the beneficial effect if any with dialysis in such patients.

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Materials and Methods

Twenty patients with extensive psoriasis of more than three years duration with normal renal status were chosen for the study. Patients with exfoliative and pustular psoriasis and those with underlying systemic disease were excluded. All modalities of treatment were stopped one week prior to dialysis.

Predialytic work up included routine blood and urinalysis, bleeding and clotting parameters, liver function tests, and levels of serum electrolytes, phosphorus, uric acid, urea and creatinine.

A clinical assessment of redness, scaling and thickness of lesions was done every week in all patients and the response was graded as

per the criteria given by Melski et al.[10]

Group I

Ten patients were hospitalised for haemodialysis. Access to blood circulation was obtained through a standard Scribner Arteriovenous shunt using Ramirezs straight shunt with wings. The shunt was introduced under aseptic conditions into a superficial vein and radial artery in the left hand. 'Nikkiso' one square metre hollow fibre type of dialyser was used. The dialysis fluid used was the standard isotonic solution.

The blood flow, ultra filtration and arterial and venous pressures were monitored with Cobe Centry-2 bed side monitor. A loading dose of 100 units of heparin/Kg body weight was given at the beginning of dialysis and repeated subcutaneous injections of heparin kept the clotting time above 20 minutes. Haemodialysis was done twice a week for 2 weeks each sitting lasting for 5 hours. Seven days after the last dialysis, the shunt was removed and patients were discharged. They were reviewed monthly for six months.

Group II

Ten patients who did not have many lesions over the abdominal wall were selected for peritoneal dialysis. The technique used was that of Maxwell et al modified by ``Barry and Schwartz" (1964). Six to eight exchanges were given during each sitting, each exchange taking about an hour. Dialysis was given twice a week for two weeks. The composition of the solution was standard isotonic solution with 1.5% glucose. The clinical response was graded as in group I, and patients were followed up for 6 months.

Results

Majority of the patients were in the age group 41-50 years. Youngest patient was 14 years and the oldest 66 years. 83.3% were males and 16.7% were females. Duration of disease varied from 3-30 years.

Group I

Nine patients completed the course of haemodialysis. One case dropped out after 3 sessions for want of clinical response. One patient who showed definite improvement at the end of one month was lost to follow up. One patient had aggravation and developed exfoliative dermatitis after 11 days. Objective response was noted in 8 patients in 13 to 15 days. One patient having the disease for 8 years showed complete clearing of lesions for over two years.

Group II

Six patients completed 4 sessions of peritoneal dialysis. Three patients dropped out after two and one after a single dialysis.

Though 5 patients improved temporarily one who had marked improvement and 3 with definite improvement worsened in 6 months. One patient showed +3 response at the end of 6 months. Of the 3 patients who dropped out after 2 dialysis one showed +3 improvement which lasted for 7 months. In the other two-1 response was noted in 2 weeks.

Discussion

Of the patients subjected to haemodialysis, only one had complete clearing of plaques including the borders at the end of one month and he remained free of lesions for over two years. Whether the marked improve-

ment seen in three other patients for seven to eight months could have been prolonged by a more frequent or longer course of dialysis is not known. Steck et al,[1,2] in a study of haemofiltration for four weeks in eleven patients with severe psoriasis also noted substantial clearing of lesion in six patients lasting for six months. Unlike other studies one patient with chronic stable psoriasis developed exfoliative dermatitis eleven days after the onset of dialysis. Our study differs from observation of Nissenson et al,[13] who observed no objective improvement in seven patients subjected to true and sham dialysis.

Though five out of six patients who completed four peritoneal dialysis showed beneficial response at the end of one month, by the end of six months only one had improvement. This differs from other studies,[14] where longer periods of remission have been noted in patients on peritoneal dialysis. The side effects during the procedure were managed conservatively. Two patients in Group I developed infection at shunt site and one patient developed shock which was corrected with oral and IV fluids. One patient in group II developed localised peritonitis.

There are many reasons postulated for the beneficial effect of dialysis on psoriasis. Some of them are removal or infusion of substances by diffusion across a membrane, sponge sink effect binding or altering physiological substances like the removal of growth promoting chemical substances such as those capable of stimulating epidermal mitosis removal of inhibitor to epidermal chalone, alteration in the intracellular cyclic nucleotides, immunological activation, removal of immunological substances or alteration of immunological feedback systems, beneficial effect of heparin,[15] removal of activated polymorphonuclear leucocytes with increased content of neutral serine proteinases through peritoneal cavity,[5] and removal of unidentified psoriatic factor.[4] Pederson,[17] in 1988 noted decreased neutrophil migration towards a chemoattractant in uremic patients on haemodialysis. Whether such a phenomenon occurs in psoriatic patients is worthy of study.

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