Delayed Onset Icodextrin Induced Exfoliative Dermatitis

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Abstract: We report a case of a 69 year old female with Chronic Kidney Disease and Coronary Artery Disease (DVD) on regular Automated peritoneal dialysis (10 Litres of 2.5% Dextrose exchanges at night) who was admitted for planned PTCA. Her PD prescription was modified with added on icodextrin 7.5% as day dwell in view of insufficient ultrafiltration with APD. The patient developed pruritic maculopapular rash which progressed to generalised exfoliative dermatitis 3 days after stoppage of Icodextrin. Peripheral blood eosinophilia was noted. Late onset Exfoliative dermatitis is a rare complication of Icodextrin based PD. Awareness of this entity is important for nephrologists and dermatologists to avoid misdiagnosis.

Keywords: Icodextrin, Rash, Peritoneal Dialysis

Introduction:
Skin Rash as a complication of Icodextrin based PD has been described earlier [1]. Icodextrin is a starch-derived, water-soluble glucose polymer, which is particularly useful for the long dwell in either continuous ambulatory peritoneal dialysis or continuous cyclic peritoneal dialysis. Icodextrin is a glucose polymer obtained from starch which on intraperitoneal administration, is poorly absorbed and hence allows longer sustained UF, which is particularly suited to long dwells. Icodextrin is absorbed through peritoneal lymphatics and after intraperitoneal hydrolysis gets converted to maltose [2,3]. Icodextrin, does not result in hyperglycemia and hyperinsulinemia, as encountered with glucose-containing solutions. It gives a potential advantage in volume overloaded patients with coronary artery disease as in the case described. Icodextrin based solutions are normally well tolerated by patients. The development of a rash following the use of icodextrin is uncommon. We report a 69-year-old female patient who developed a skin rash that progressed to exfoliative dermatitis following the use of icodextrin.

Case History:
A 69 year old female with Chronic Kidney Disease Stage V and Coronary Artery Disease on regular Automated peritoneal dialysis with glucose exchanges, was admitted for undergoing planned PTCA. Her PD prescription was modified with added on icodextrin 7.5% as day dwell for five days in view of insufficient ultrafiltration with APD. The Icodextrin dialysis was stopped after 5 days as it failed to produce sufficient ultrafiltrate. On the 3rd day following discontinuation of Icodextrin dialysis, the patient developed generalized erythematous, intensely pruritic, maculopapular rash on her back (Figure 1) which progressed over a period of
2 weeks to generalised exfoliative dermatitis (Figure 2). The patient was afebrile and there were no signs of any ongoing infection. There was neither a recent alteration in her diet and medications nor a previous history of any allergic skin conditions. Her hemoglobin was 9.6 g/dl, total WBC count was 14200/mm3 (P-74% L-14.6% M-2.1% E-9%), absolute eosinophil count was 1278/mm3. Creatinine 10.8 mg/dl, Uric Acid 8.4 mg/dl, Sodium 138 mEq/L, Potassium 5.6 mEq/L, Chloride 94 mEq/L, Bicarbonate 23 mEq/L, Calcium 9.5 mEq/L. The patient was treated with topical emollients and Oral Antihistamines.

Figure 1 – Maculopapular skin rash at the back

Figure 2 – Exfoliative Dermatitis involving Palms

Discussion

Wolfson et al in a meta analysis reported skin rash incidence of 10.1% in patients on icodextrin based PD compared with controls (4.6%, P<0.003) [1]. The reported incidence of skin rash with icodextrin varies from 10-18.9% [4]. A variety of skin lesions have been reported including exfoliative dermatitis, acute generalized exanthematous pustulosis, maculopapular rash, and chronic lymphocytic vasculitis. Onset of rash varies from days to months post initial exposure, but usually occurs within a few weeks. The rash generally involves palms and soles [1].

A study by Goldsmith et al. [5], reported that the development of skin reactions following icodextrin dialysis to be 15%. The biopsy of skin rashes had shown nonspecific inflammatory reaction. Skin rashes of patients resolved hours and/or weeks after stopping icodextrin. Wilkie et al. [6] reported 3 patients with limited rashes on the hands, arms and body, and Lam-Po-Tang et al. [7] reported a patient who developed severe exfoliative dermatitis 10 days after icodextrin was initiated.

The unique feature of our case is the delayed onset of skin rash 3 days following stoppage of Icodextrin. The skin lesions progressed to generalized exfoliative dermatitis. Hitherto, in all case reports skin lesions have developed while the patients were in Icodextrin PD. Secondly, we could not find a reference for peripheral cosinophilia in the literature describing Icodextrin Skin Rash. In fact, attempts at reproducing skin rash following Intradermal Injection of Icodextrin has been negative in literature [8].

Anti- Dextran antibodies were detected in peritoneal dialysis patients treated with icodextrin [9]. Icodextrin related allergic skin rashes are self limiting and usually resolve in a week's time after discontinuing Icodextrin, leaving no residual scars or any other sequelae. Though an uncommon occurrence, nephrologists and dermatologists need to be aware of Icodextrin related cutaneous hypersensitivity reactions in patients undergoing peritoneal dialysis and promptly discontinue the same.
Bibliography


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