Case Study – Atopic Dermatitis

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MT is a 4 year old male that was referred from Dermatology to our allergy clinic at Steve Biko Academic Hospital on the 7\textsuperscript{th} of July 2014.

He presented with a problem of severe Atopic Dermatitis as illustrated below.

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{image1.png}
\caption{Clinical photograph of MT with severe Atopic Dermatitis.}
\end{figure}

Further history and symptomatology

- The rash started at 1 year of age and worsened as time went on.
- The rash was extremely itchy and the child was constantly scratching the affected areas.
- The child’s quality of life was affected as the child often wakes up at night to scratch the affected areas.
- The child was seen in Dermatology since February this year, he had received 4 courses of oral prednisone for a week and had been started on cyclosporine a month before presenting to us in the allergy clinic. The mother did report that there is a temporary response to the oral prednisone initially but the rash soon recurred. She had not noticed an improvement after cyclosporine had been commenced.
- There were no specific food items that the child avoided or disliked and there were no particular foods that made the rash worse.

Family history:

No family history of atopy
Birth history and Road to Health Chart:
The patient was born at term via normal vaginal delivery with no complications post delivery

Surgical History:
None

Medical History:
The patient is HIV negative and has had no previous admissions to hospital
He is not on any chronic medication.
In terms of the allergic march, there were no overt food allergies as an infant on history. The child did not display evidence of allergic rhinitis or asthma on history.

Feeding history:
The child was exclusively formula fed until 7 months of age at which weaning to solids had commenced.

On Examination
This is a healthy looking 4 year old child, with no evidence of allergic facies.
Anthropometry Within normal limits, no evidence of failure to thrive
ENT examination No inflamed turbinates
Eyes No evidence of conjunctivitis
Skin hyperpigmented, lichenified diffuse rash involving the flexural surfaces of the elbows and knees. Severe dermatitis of the scalp, neck, trunk and lower limbs
The rest of the systems were within normal limits.

Assessment
1. Severe atopic dermatitis refractory to conventional treatment

Discussion and plan:
This child had severe atopic dermatitis which affected his quality of life. There seemed to be no particular food allergens implicated. Skin prick tests were deferred due to severity of the skin lesions. Due to the early onset
of presentation together with the fact that it was refractory to conventional treatment - an FXS screen was performed which revealed no positive food allergens.

The cyclosporine was discontinued and the child was admitted for wet wraps. The wraps were changed every 48 hours and a dramatic improvement was noted. No foods were excluded from the diet. After just two sets of wraps, there was a dramatic improvement as depicted below.

As depicted below one can appreciate the dramatic improvement noted.

The child was subsequently discharged with education on pharmacological and non-pharmacological measures to control atopic dermatitis.

Non pharmacological measures included the avoidance of soaps during lukewarm baths, the use of emollients, avoidance of woollen clothing, keeping skin well covered and protected in addition to other measures.

Pharmacologically, the child was discharged on a moderately potent steroid agent for the body and a mild agent for the face. The importance of weekly or twice weekly topical steroid use for maintenance therapy was also stressed.

**Wet wrap therapy**

Atopic dermatitis is a chronic inflammatory skin condition that generally begins during infancy and is the most common skin disease in children under the age of 11 years. Potential causes include irritants such as soap and detergents, food allergens, contact allergens, and skin infections.¹
The aim of topical therapy is to protect the skin from scratching and environmental factors and to suppress the inflammatory changes and infection if present. Emollients inhibit water loss and provide a protective coating; they are recommended in all patients with atopic dermatitis. Additionally, emollients may reduce the need to use topical corticosteroids.

Wet wrap therapy refers to wet bandages applied over emollients and/or topical steroids. The use thereof is indicated in acute flares of atopic dermatitis in cases that are severe and refractory to conventional topical corticosteroid treatment. The main advantages of wet wrap therapy is that it rehydrates the damaged skin, reduces itching and erythema, cools the skin, and enhances the penetration of topical medication utilised. It also provides a physical barrier against scratching, which in turn prevents secondary infection. However, wet wrap therapy is time consuming and there is a risk of enhancing the systemic side effects of topical corticosteroids. Wet wrap therapy has been shown to be more beneficial if topical corticosteroid added to the emollient and the side effect profile minimal if used for less than 14 days.

**Sources**