Review Article (Open access)

Treatment Options in Progressive Childhood Vitiligo

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ABSTRACT- Progressive Childhood vitiligo is a common acquired de-pigmenting condition that can affect skin and hair with devastating psychological effects on patients as well as their parents. Children with vitiligo often suffer from anxiety and depression because of their unusual appearance.[1] Management of progressive vitiligo in children is difficult as therapeutic options are restricted when compared to that in adult patients, as steroids are the mainstay of treatment to stop the progression.[1] Treating a patient of vitiligo is always a difficult task and the job becomes even more challenging when the patient is a child and his/her disease is progressing at a fast rate.

Key-words- Children, Progressive vitiligo, Oral mini pulse, Betamethasone, Dexamethasone

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1. INTRODUCTION

Vitiligo is an acquired pigmentary disorder occurring irrespective of age, sex and race. [1] Vitiligo usually presents itself in childhood or young adults, out of which 30% - 40 % develop this condition by 20 years of age and 25%, develop before 8 years while mean age of onset is 4 to 5 years. [2] Childhood Vitiligo differs from adult disease in the following aspects: female preponderance is observed, segmental presentation is more common, association with other autoimmune disorders is rare. [3] Self-esteem of the affected children and their parents is disturbed with marked psychosocial effect. [4]

Vitiligo has been categorized as “segmental” and “non-segmental” types. Segmental vitiligo (SV) which is more common in children implies occurrence of depigmented macules and patches along dermatomal or quasi-dermatomal pattern, without crossing the midline [5] whereas non-segmental vitiligo (NSV), the skin lesions may be generalized (vitiligo vulgaris, universal vitiligo) or localized (focal, mucosal, acrofacial, acral). [1]

There is no definite definition for progressive vitiligo but development of new lesions or extension of old lesions during 3 months prior to examination is considered as progressive vitiligo. Risk factors for progression in childhood vitiligo includes:

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Positive family history, clinical type–Non segmental vitiligo, longer duration of disease, koebner’s phenomenon and mucosal involvement. Treating a patient of vitiligo is always a difficult task and the job becomes even more challenging when the patient is a child and his/her disease is progressing at a fast rate. [6] This is due to the fact that the treatment options available for this group of patients are quite limited, not universally effective, and liable to cause troublesome adverse effects. [6] Treatment options like immune-suppressants, oral psoralens, [7] and even conventional doses of oral steroids cannot be easily employed in children with vitiligo because of the side effect profile of these drugs. [6]

Counseling is the foremost part of treatment due to social stigma. Counseling improves compliance of the treatment as it to some extent relieves the anxiety part of disease which is commonly associated in progressive childhood vitiligo the treatment is difficult to decide as we have to choose between the beneficial effects and side effects.

The main emphasis should be:

- To stop the progression of the disease
- To induce re-pigmentation of the lesions

The current treatments for this disease include: Systemic steroids, topical steroids, phototherapy, or combination therapies.

2. Treatment Options in Progressive Vitiligo in Children [8]

2.1 Systemic: Corticosteroid and other immune-suppressant.

2.2 Phototherapy

Topical PUVA, Systemic PUVA (>12 years), NB-UVB, Phenylalanine + PUVA, Excimer laser (308 nm).

2.3 Topical
Corticosteroids, Tacrolimus/pimecrolimus, Calcipotriol, Pseudocatalase, Combination

2.4 Others: Cosmetic camouflage

3. Management
3.1 To Stop the Progression of Disease: Systemic corticosteroids are the first line treatment if no contraindication as it:

3.1.1 Halts the progression of disease
3.1.2 Induces regimentation: Once process of destruction of melanocyte is arrested, although time taken for disease activity to stop is variable from few weeks to months.

Systemic corticosteroids can be given in Daily dosage, Alternate day dosage, Oral minipulse therapy (OMP).

Daily dosage has side effects such as– adrenal suppression, avascular necrosis, osteoporosis and growth retardation.

OMP is given in higher doses for 2 consecutive days a week and remaining 5 days are treatment free.

Researchers showed that cortisol levels decreased significantly after the second dose of dexamethasone in a week, but returned to baseline range during the 5 days in which patient was off treatment so, OMP did not lead to adrenal suppression.

Table 1: Response of vitiligo to OMP

	OMP	Dose (mg)	No Progress (%)	Repigmentation (%)	SS Side Effects (%)	Total (n)
Pasricha et al.[9]	Beta- metha-sone	5mg/day 2days a week	89	80	22.5	40
Kanwar et at.[10]	Dexa-Methasone	5-15mg/day 2days a week	43.8	43.8		32
Rath et al.[11]	Beta-methasone	0.1mg/kg/day twice weekly	90	15.5	50	20
Kim et al.[12]	Prednisolone	0.3mg/kg/day daily	87.7	70.4	56.7	81
Radakovice et al.[13]	Dexa-methasone	10mg/day 2 days a week	88	17.2	69	29
Banerjee et al.[14]	Prednisolone	0.3mg/kg/day Daily	90	76	Not reported	100
Majid et al.[15]	Methyl-Prednisolone	0.8mg/kg/day 2 days a week	90	65	25.7	400

3.2 To Induce Re-pigmentation
Once progression is stopped adjuvant therapies to augment pigmentation can be added.

3.2.1 Phototherapy
Narrow-band ultraviolet B (NB-UVB)

Is an effective modality for the treatment of generalized childhood vitiligo with >20% BSA [8] involvement. It shows Immunomodulator effect, Halts the progression of the disease, and stimulates the residual outer hair root sheath melanocytes. (NB-UVB) is given initially 3 doses per week and then increased by 10% at every sitting with a starting dose – 280 mJ.

3.2.2 Topical therapy
3.2.2.1 Mid-potent topical corticosteroid
Mometasone cream (0.1%, once-daily application) for 3 months shows significant repigmentation.

Fluticasone is used over mometasone due to its long term use and lesser side effects.

3.2.2.2 Topical calcineurin inhibitors
Tacrolimus & pimerolimus are effective alternatives to topical corticosteroids in terms of lesser side effects. [1]

3.2.3 VIT D3 analogue
Calcipotriol is a synthetic derivative of calcitriol which helps in regulating calcium metabolism.

- It has lesser side effects.
- Re-pigmentation is achieved as early as 4 weeks of treatment.

3.2.4 Combination therapies

- Combination of calcipotriol and corticosteroid developed good re-pigmentation in progressive childhood vitiligo.
- NB-UVB in combination with topical steroid or calcipotriol is the effective and comparatively safe treatment modality in progressive childhood vitiligo.

4. CONCLUSION

Counseling is the foremost part in treatment of childhood vitiligo. Medical treatment should be started as early as possible. Systemic steroids are the treatment of choice; OMP with long acting steroids should be the treatment of choice as it has minimal side effects as compare to daily dosage. NB-UVB in combination with calcineurine inhibitors or topical steroid can be used as adjuvant or alternate therapy but the disappointing fact is that none of the available therapies are absolutely effective and disease has a relapsing course.

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