AN OBSERVATION ON SUCCESSFUL TREATMENT OF ACNE SCAR WITH HOMEOPATHIC MEDICINE

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ABSTRACT

Acne is the involvement of the oil glands at the base of hair follicles characterized by papular and pustular eruptions over face, forehead, chest and back. The teenage groups are commonly affected. Acne scars are the most important sequel of inflammatory acne. They are mainly two types - atrophic and hypertrophic. Each type of scar has its own unique features and characteristics. The pathogenesis of acne scar is still not well understood. In conventional methods there are numerous treatment procedures are commonly practiced (either single or combined) like – dermabration, microdermabration, chemical peels, laser therapy, punch excision/elevation/grafting, needling, subcision, fillers intralesional steroid therapy, cryotherapy and surgery for hypertrophic lesions and keloids. All these methods are not only too expensive but not without complications. In this observation we have seen very promising result by homeopathic treatment in all types of acne scars which is cost effective, reachable to all patients, effective orally, simple and convenient to all and without any complications. A selective group of patients suffering from acne scars were treated with homeopathic medicines along with a control group treated only with placebo containing the vehicle of the original medicines. In this preliminary observation, in our clinic we treated and analyzed one hundred such acne cases along with 20 control cases those were followed for six months. Out of one hundred cases 92 cases showed promising results within six months and in most of these cases, the patients had regained normal skin within 12 months. Only single oral homeopathic medicine (either “Sulphur” or “Tuberculinum”) was used without any local application. The results of this study were very encouraging indicating a definite role of homeopathic medicine in acne scar.

Key words: Acne scar, Homeopathy, Sulphur, Tuberculinum.

INTRODUCTION

Acne is a common disorder of adolescents. The teenage groups are commonly affected. During healing, inflammatory acne can cause many other abnormal conditions like abnormal discolouration of the skin, erythema and most commonly different types of scaring and keloids. Scars are caused by dermal damage, while erythema and pigmentation occur because of epidermal damage. Scars are atrophic, hypertrophic and perifollicular elastolytic type. Pathogenesis of scar is not well understood. But it depends upon net loss or gain of collagen, severity of infection and duration of suffering. Delayed starting of treatment is also an important factor. Genetic factors, which can determine differences in the process of cell-mediated immune response and in the capacity to respond to tissue damage, are the main determining factors influencing scar formation (He L et al., 2014).

The scarring process can occur at any stage of acne; however, it is uniformly believed that early therapy in inflammatory and nodulo-cystic acne is the most effective way to prevent post-acne scarring (Levy LL et al., 2012).
Severe scarring caused by acne is not only causes a serious cosmetic disfigurement but it is also associated with functional impairment as well often manifested as a high magnitude of psychological problem.

Atrophic scar is more common (>80%) than hypertrophic scars and keloids are also commonly found among the patients of acne scar. Atrophic scars are of three types – Box scar, Ice pic scar and Rolling or valley scar. Sometimes in the same patient we can observe all the types of atrophic scars and it can be very difficult to differentiate between them. The ice pick scars, which represents almost the 60%-70% of atrophic scars, are usually punctiform, sharp, deep and have a “V shape” in longitudinal section. The box scar ones are round or oval in shape, from 1.5 through 4.0 mm in diameter, wide at the surface and the base showing “U” shape, representing 20%-30% of total atrophic scars. Finally, the rolling scars have “M” shape, and, therefore, give a rolling appearance to the skin; they usually have a diameter of 4-5mm and represent from 15 through 25% of atrophic scars (Fabbrocini G et al., 2010).

Different scales for scar evaluation

The qualitative scarring grading system proposed by Goodman and Baron (Dreno B et al, 2006) is simple and universally accepted. According to this classification, four different grades can be used to identify an acne scar, as shown in Table 1. Different patterns can be simultaneously present and may be difficult to differentiate. For these reasons, the same authors subsequently, suggested a quantitative numeric grading system based on lesion counting (1 point for a number of lesions < 10, 2 points between 11 and 20, 3 points >20) and severity (1 point for milder atrophic scarring, 2 points for moderate atrophic scarring, 3 points for severe atrophic scarring, 2 or 6 point for hyperplastic scarring). The lesion counting score is then multiplied for the lesion severity score. The final score depends on the addition of points assigned to each respective category and reflects disease’s severity, ranging from a minimum of 0 to a maximum of 84 (Table 2). In 2006 (Dreno B et al., 2006) proposed a semiquantitative scale, the ECCA (Echelle d’Evaluation clinique des Cicatrices d’acné), based on the sum of individual types of scars and their numerical extent. In particular, this type of scale detected six types of scars and assigned them a score indicating the disfiguring impact: the weighting factor. The higher the disfiguring effect, the higher the weighting factor assigned. The ECCA has also shown a good inter investigator reliability.

Etiology – Exact cause of acne is not known. Possible factors are
1) Hormonal – a) Excess secretion of androgen; as it stimulate the oil gland and increased sebum excretion. b) Progestogens also increase sebum secretion but oestrogen reduce it. But the vast majority patients with acne have normal endocrine profile.
2) Excessive sebum, that can breakdown cellular wall causing bacteria to grow (Propionibacteria ).
3) Hereditary/Genetic – There is a positive family history in many cases. In our clinic 5% cases have positive family history.
4) Medicine – Androgen, Lithium.
5) During Pregnancy because of hormonal change.
6) Usually begin in the teen age years (between 12 and 18 yrs) and last for 5 – 10 yrs. It may persist in adulthood (beyond 30 yrs).
7) Male and female are equally affected.
8) Diet – high glycomic load diet and milk products may be a factor.

Pathogenesis of acne scar

Pathogenesis of scar is not well understood. There are multiple factors like excess sebum production, androgen activity, bacterial colonisation, alteration of quality of sebum lipids and follicular hyper keratinization etc. may responsible for this changes.

Excess sebum secretion ---→ Bacterial colonisation (Propioni bacterium) ---→ Hyperkeratinization ---→ production of inflammatory Lipids ---→ Stimulate infrainfundibular process ---→ Stimulate the wound healing process ---→ Erythema, hyperpigmentation, atrophic and hypertrophic changes.

Wound healing is one of the most complex biological process and involves soluble chemical mediators, extracellular matrix components, parenchymal resident cells as keratinocytes, fibroblasts, endothelial cells, nerve cells, and infiltrating blood cells like lymphocytes, monocytes, and neutrophils, collectively known as immune inflammatory cells. Scars originate in the site of tissue injury and may be atrophic or hypertrophic. The wound healing process progresses through 3 stages; (1) inflammation, (2) granulation tissue formation, and (3) matrix remodeling.
Inflammation
Blanching occurs secondary to vasoconstriction for hemostasis. After the blood flow has been stopped, vasodilatation and resultant erythema replace vasoconstriction. Melanogenesis may also be stimulated. This step plays an important role in the development of post acne erythema and hyper pigmentation. A variety of blood cells, including granulocytes, macrophages, neutrophils lymphocytes, fibroblasts, and platelets, are activated and release inflammatory mediators, which prepare the site for granulation tissue formation. By examining biopsy specimens of acne lesions from the back of patients with severe scars and without scars, Holland et al. found that the inflammatory reaction at the pilosebaceous gland was stronger and had a longer duration in patients with scars versus those without; in addition, the inflammatory reaction was slower in those with scars versus patients who did not develop scars. They showed a strong relationship between severity and duration of inflammation and the development of scarring, suggesting that treating early inflammation in acne lesions may be the best approach to prevent acne scarring.

Granulation Tissue Formation
Damaged tissues are repaired and new capillaries are formed. Neutrophils are replaced by monocytes that change into macrophages and release several growth factors including platelet-derived growth factor, fibroblast growth factor, and transforming growth factors α and β, which stimulate the migration and proliferation of fibroblasts. New production of collagen by fibroblasts begins approximately 3 to 5 days after the wound is created. Early on, the new skin composition is dominated by type III collagen, with a small percentage (20%) of type I collagen. However, the balance of collagen types shifts in mature scars to be similar to that of unwounded skin, with approximately 80% of type I collagen (Fabbrocini G et al., 2010).

Matrix Remodelling
Fibroblasts and keratinocytes produce enzymes including those that determine the architecture of the extracellular matrix metalloproteinases (MMPs) and tissue inhibitors of MMPs. MMPs are extracellular matrix (ECM) degrading enzymes that interact and form a lytic cascade for ECM remodeling. As a consequence, an imbalance in the ratio of MMPs to tissue inhibitors of MMPs results in the development of atrophic or hypertrophic scars. Inadequate response results in diminished deposition of collagen factors and formation of an atrophic scar while, if the healing response is too exuberant, a raised nodule of fibrotic tissue forms hypertrophic scars (Fabbrocini G et al., 2010).

Morphology, Histology, and Classification
Scarring can occur as a result of damage to the skin during the healing of active acne. There are two basic types of scar depending on whether there is a net loss or gain of collagen (atrophic and hypertrophic scars). Eighty to ninety percent of people with acne scars have scars associated with a loss of collagen (atrophic scars) compared to a minority who show hypertrophic scars and keloids.

How to prevent acne and control repeated infections
General instructions –
1) Do not touch and press the affected parts with fingers and avoid picking and popping. As it may causes secondary infections.
2) Warm sponging at least once in a day. It may activate the healing process
3) Nothing to be applied over the affected area except glycerin water. It has a soothing effect on skin.
4) Avoid anxiety and stress.
5) Common physical exercise at least one hour every day.
6) Early medication.
To avoid –
High glycaemic load diet and milk products. alcohol etc. Non-veg food mainly red meat.
Constipation, about 80% acne patients complain constipation.

Treatment of Acne
Conventional: - Conventional methods of treatment of acne are a long process and depend upon the character and type of the lesion. There are several multiple management options, both medical and surgical, and laser devices are useful in obtaining significant improvement.
In short, treatment of acne can be divided broadly into two groups – a) Topical and systemic therapy. b) Cosmetic, surgical and laser therapy. Topical Therapy - Topical Retinoid i.e. Retinoic acid, Isotretinone, Adapalene 0.1%, BPO (benzoyl peroxide).
Anti microbial agents like – Clindamycin, Erythromycin, BPO.
Systemic Therapy - Clindamycin, Erythromycin, Tetracycline, Cephalosporin. Hormonal therapy if necessary.
Cosmetic – 1) Abrasive material like polyethylene, aluminium oxide. 2) Light Cautery. 3) Aspiration.
Light- Based Therapy – UVA/UVB, BLUE / RED LIGHT. KTP Laser, ALA/PDT Laser( photodynamic ).
Cryo Therapy – like superficial freezing with liquid nitrogen.
Chemical Peels – like alfa hydroxyl acid, salicylic acid and TCA.
MATERIALS AND METHODS
Total 220 patients were enrolled in this study. Out of 220 acne patients, acne with scar patients were 100 (45.45%), Atrophic scar 87%, Hypertrophic scar 3%, Pigmented scar 10%. There were also 20 control cases (11 female and 9 male) in this study those were given placebo and followed for six months to see if there was any change. Most of them aged between 13 to 22 yrs (78 %), their mean age was 18 yrs. Beyond 40 yrs of age there were only female patients (2% of total patients). Age distribution of patients is given in Fig. 1. Male: Female ratio was ~1: 1.2. All patients were diagnosed, categorized and followed up by our Dermatologist of the institution. The patients were enrolled after taking consent from the patients or from their parents. Permission of this study was also taken from Ethical committee of the Institute. All types of scar patients were included in this study. Random selection was done of both sexes, of different cast and ages. Chronological photography was done for all patients. As most of the patient came after 2-3 years of conventional treatment mixed scar were noticed in most of the patients.

Homoeopathic medicines and treatment
The same medicines were given to all the patients except in the control group where only lactose pills were given which looks similar to our medicines and lactose was the vehicle of these medicines. The medicine was purchased from reputed homoeopathic medicine shop (HAPCO) in Kolkata. Medicines were given as 4 pills (one dose) daily for 7 days then one dose in 15 days intervals. Only single oral homoeopathic medicine (Sulphur, Tuberculinum) were used without any local application.

Table 1. Qualitative scarring grading system
1. Macular These scars can be erythematous, hyper- or hypopigmented flat marks. They do not represent a problem of contour like other scar grades but of color.
2. Mild atrophy or hypertrophy scars that may not be obvious at social distances of 50 cm or greater and may be covered adequately by makeup or the normal shadow shaved beard hair in men or normal body hair if extra facial.
3. Moderate atrophic or hypertrophic scarring that is obvious at social distances of 50 cm or greater and is not covered easily by makeup or the normal shadow of shaved beard hair in men or body hair if extra facial, but is still able to be flattened by manual stretching of the skin (if atrophic).
4. Severe atrophic or hypertrophic scarring that is evident at social distances greater than 50 cm and is not covered easily by makeup or the normal shadow of shaved beard hair in men or body hair If extrafacial and is not able to be flattened by manual stretching of the skin.

Table 2. Goodman's quantitative global acne scarring grading system

<table>
<thead>
<tr>
<th>Grade or Type</th>
<th>No. of lesions 1 (1-10)</th>
<th>No. of lesions 2 (11-20)</th>
<th>No. of lesions 3 (&gt;20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Milder scarring (1 point each)</td>
<td>1 point</td>
<td>2 points</td>
<td>3 points</td>
</tr>
<tr>
<td>Macular erythematous pigmented. Mildly atrophic dish-like</td>
<td>1 point</td>
<td>2 points</td>
<td>3 points</td>
</tr>
<tr>
<td>B) Moderate scarring (2 points each)</td>
<td>2 points</td>
<td>4 points</td>
<td>6 points</td>
</tr>
<tr>
<td>Moderately atrophic dish like. Punched out with shallow bases small scars (&lt;5mm) Shallow but broad atrophic areas</td>
<td>2 points</td>
<td>4 points</td>
<td>6 points</td>
</tr>
<tr>
<td>C) Severe scarring (3 points each)</td>
<td>3 points</td>
<td>6 points</td>
<td>9 points</td>
</tr>
<tr>
<td>Punched out with deep normal bases, small scars (&lt;5mm) Punched out with deep but abnormal bases, small scars (&lt;5mm) Linear or troughed dermal scarring Deep, broad atrophic areas</td>
<td>3 points</td>
<td>6 points</td>
<td>9 points</td>
</tr>
<tr>
<td>D) Hyperplastic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Papular scars</td>
<td>2 points (Area &lt; 5 mm)</td>
<td>4 points (Area 5-20 cm)</td>
<td>6 points (Area &gt;20 cm)</td>
</tr>
<tr>
<td>Keloidal /Hypertrophic scars</td>
<td>6 points</td>
<td>12 points</td>
<td>18 points</td>
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Table 3. The results are given in different categories
Earliest positive response was found (in most of the cases) – within 3 months. Latest duration of positive response was – 6 months. Earliest period of recovery was – 6 months (as normal as other parts of the skin). However, average duration for such findings was 8 months. Maximum period of recovery was – 12 months. No response after 12 months was found in 3 cases (3 %). Discontinued treatment – 5 scar patients.
Atrophic scar – 87, Hypertrophic scar – 3, Pigmented – 10
Atrophic:( Roller – 5. Only ice pic – 37, Only Box – 5, Mixed - 40) – Icepic + Box – 37 and Icepic +Box + Roller – 3
Ice pic 85% of atrophic and 74 % of total scar patients.

**Fig 1. A typical follow up pictures in an acne scar patient (date of photograph is given in the bracket)**

<table>
<thead>
<tr>
<th>Ice pick scars (20.05.11)</th>
<th>Follow up (30.03.12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healed Ice pick scars (18.10.12)</td>
<td>After one year follow up (23.02.13)</td>
</tr>
</tbody>
</table>

**RESULTS AND DISCUSSION**

Earliest response was seen in majority number cases within three months and 92 patients were cured within 12 months. No response was noticed in 3 cases after 12 months of treatment. After two years follow up we have seen no relapse. In placebo cases after 6 months follow up out of 20 patients no change was noticed in 16 patients and new pimples came out in remaining 4 patients. Details of the results are given in Table 3 and in Figure1. This study indicated a definite role of homeopathic medicines in the treatment of acne scar, the most interesting finding in this study is that except hypertrophic scar, satisfactory remission seen in all types of acne scars. The average scoring of 4.6 of the scar associated acne became zero scoring after the treatment. The real mechanism of action of these homeopathic medicines is very difficult to explain and so far there is no definite explanation of the mechanism of action of these medicines. Thus possible attempts should be made in future studies to find out the mechanism. This preliminary report may help the suffering humanity at large.

**REFERENCES**


