AIDS IMPACT SPECIAL ISSUE The face of HIV and AIDS: can we erase the stigma?

Angelica Kavouni, Jose Catalan, Sharron Brown, Sundhiya Mandalia, Simon
Barton

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Table 1. Appearance Satisfaction Questionnaire total scores improved significantly at three months post last treatment session compared with baseline (p<0.001).

	Baseline <i>10 items</i> <i>N=89</i>	Week 12 <i>10 items</i> <i>N=89</i>	Week 12-baseline <i>10 items</i> N=89
Facial appearance <i>10 items – max possible score = 50</i> <i>Standardised so that the score is out of 100.</i> <i>Where value of 100 indicating ‘worse’</i>	38(28 to 48) [20 to 82]	64(52 to 74) [26 to 94]	23.7(20.2 to 27.2) [-28 to 66) P<0.001

Median(IQR)
[range]
& Mean change (95% CI), p-value using paired t-test

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The face of HIV and AIDS: can we erase the stigma?

Abstract

Facial Lipoatrophy can be obvious and stigmatising. Poly-L-lactic (PLLA) acid has been used widely for the correction of HIV associated facial lipoatrophy. Analysis of the PLLA treatment protocols of 441 consecutive patients was undertaken. Product dilution, product volume per session, number of sessions, time between sessions, facial areas treated, plane of injection and incidence of injection-site nodules were recorded. Assessments included the Hospital Anxiety and Depression Scale and the Appearance Satisfaction Questionnaire. During the learning curve 30 patients were treated every 2 weeks for a minimum of 3 sessions. A 3ml dilution was used and a total of 5ml was injected in the deep dermis of the buccal areas. The incidence of nodule formation was 31% and 52% of patients did not achieve resolution of their facial disfigurement. 411 patients were treated every 4 weeks for a minimum of 4 sessions. A minimum 5ml dilution was used and a minimum total of 10ml was injected subcutaneously in the temporal, infraorbital and buccal areas. The incidence of nodule formation was 2.9% and 10% of patients did not achieve resolution of their facial disfigurement. Patient anxiety and depression scores and appearance satisfaction scores improved significantly with treatment.

The face of HIV and AIDS: can we erase the stigma?

Introduction

Facial lipoatrophy has some very distinctive characteristics with concavities in the temple areas and cheeks, deep set orbits, folds, protruding bony landmarks and visible musculature. This appearance can be devastating for the patient as it is disfiguring and stigmatising. In women the loss of facial fat de-feminises the facial characteristics. Patients with facial lipoatrophy are exposed and have no control over the disclosure of their condition. This can result in employment or workplace discrimination; it can affect relationships, sexual function and even treatment adherence. It influences a patient's sense of wellbeing, body image and self esteem. In some cases patients become socially isolated (Collins et al, 2000 and Echavez and Horstman 2005)

A number of studies have recently assessed the impact of changing antiretroviral regimens to monitor the effect of drug therapy on fat redistribution. It is likely that moderate and severe forms of lipoatrophy can now be considered a preventable complication of HIV treatment. However, it is important to recognise that there is a current pool of patients who have been affected by lipoatrophy over the past few years and their management will remain a continuous challenge.

An array of temporary, semipermanent and permanent injectable fillers has been used to correct facial lipoatrophy. By far the most experience comes from the use of Poly-L-lactic acid [PLLA] or New-Fill™, a synthetic polymer from the alpha-hydroxy acid family which has been available for thirty years with different medical uses. PLLA is injected into the deep dermis in order to increase fibroblast numbers and activity, resulting in increased collagen synthesis. PLLA has two modes of action, initially there is a temporary volumising effect in the skin of the injected area and careful counselling is essential to avoid patient disappointment when this reduces. The second mode of action is to stimulate collagen production over time. It may take

several sessions before a desired result in the facial contours is seen. The product is fully biodegradable at about nine months.

A pilot study at the Chelsea and Westminster Hospital reported positive patient benefits following PLLA injections in persons with HIV associated facial lipoatrophy.

(Moyle et al, 2006) The benefits are both cosmetic and psychological and appear to last up to 2 years. The injections were very well tolerated with few adverse effects recorded. However the incidence of collagen over stimulation and nodule formation (30%) was unacceptably high. An unattractive "cobblestone" appearance can be seen on the skin surface in some patients, an unmistakable sign of previous Newfill treatment. As many as 52% of patients did not achieve resolution of their facial disfigurement and required further treatments.

Treatment protocol has since evolved in our clinic in an effort to reduce overcorrection and subcutaneous nodules and improve the aesthetic correction of the deformity. The objectives of this report are to describe the modifications of the PLLA treatment protocol for HIV associated facial lipoatrophy and to evaluate the efficacy of the new strategy on previously reported outcomes in our unit.

Methods

This was a retrospective analysis of the PLLA treatment protocols of 441 consecutive HIV-positive patients with facial lipoatrophy. Patients were assessed to be in good health, have stable CD4 counts and viral loads consistent with stable disease before treatment commenced. Male and female patients over 18 years of age were treated referred to us by their HIV physician.

The presence of lipoatrophy was assessed using the Chelsea and Westminster scale as mild, moderate or severe.

A minimum 5ml dilution was used and a minimum total of 10ml was injected. The facial areas treated included the temples, infraorbital grooves, buccal areas, nasolabial folds, above and below the zygoma and parotid areas.

Patients with mild changes received three treatments, with moderate changes were assigned four treatments while patients with severe changes were assigned five treatments. They were advised to massage the treated areas twice daily for several weeks. Treatments were repeated every four weeks.

During the learning curve 30 patients were treated every two weeks for a minimum of three sessions. A 3ml dilution was used and a total of 5ml was injected in the deep dermis of the buccal areas only as reported elsewhere.

Patients were reviewed three months following initiation of treatment. Treatment efficacy was assessed subjectively by both patient and physician and the need for further treatments than already allocated was recorded. The incidence of injection-site nodules was also recorded. At baseline and 3 months follow up patients were asked to complete the Hospital Anxiety and Depression Scale questionnaire (HADS) to assess anxiety and depression (Zigmond, 1983) and an Appearance Satisfaction Questionnaire to assess perceived changes in appearance. The latter contains ten items relating to facial appearance and changes in body shape with a maximum possible score of 50 and is standardised so the score is out of 100, the value of 100 indicating "worse".

Statistical Analysis

Each of the item scale data are presented as median and inter-quartile range while a standardised score were generated for each of the scales; facial appearance and HAD. A total score for each scale was generated by summing the scores from all the items in a scale where all missing data were given a score of 0. The total score from each of the scales were taken as a fraction of the observed total score from that scale relative to the expected total score. These have been expressed as that out of 100. A minimum possible score that could be observed could be 0 and a maximum possible score that could be observed is 100. Changes in the total score between baseline and week 12 are presented as mean change in derived total score with

95%CI and these have been tested using the paired t-test. All p-values presented are two-tailed.

Results

411 patients were treated by two experienced injectors between August 2003 and November 2006 with a follow up ranging from three to 32 months post last treatment session. Patients were mostly male (96%) with a mean age of 42 years.

Lipoatrophy severity was graded as mild (n=3, 1%), moderate (n=231, 56%) and severe (n=177, 43%). Severity showed a reducing trend in the last year of patient referrals.

Volume restoration was observed gradually after the second session and was accepted as optimal by 90% of patients at three months post last treatment session. The remaining patients had 1-4 further treatment sessions. All had severe lipoatrophy at baseline.

Female patients required less product volume overall but more injections around the zygoma to overcome the manly appearance of lipoatrophic contours.

Reported adverse effects during the treatment period were minimal and included injection site erythema, tenderness, oedema and ecchymosis. The incidence of nodule formation was 2.9%. Patients showed significant improvements in depression and anxiety scores assessed by HADS at three months post last treatment session compared with baseline ($p<0.059$, $p<0.080$ respectively).

Appearance Satisfaction Questionnaire total scores improved significantly at three months post last treatment session compared with baseline ($p<0.001$). (table 1)

Discussion

Facial lipoatrophy can be devastating for the patient, it is disfiguring and debilitating. Being aware that the face holds the image of appearing more unwell than you may actually be, restricting the ability to correctly express emotions, or exaggerating ageing due to changes in facial contours from the loss of facial fat, can greatly impact

on the quality of life. Facial lipoatrophy can influence a patient's sense of wellbeing, body image and self esteem as this alters how the patients can perceive themselves. It can carry a special degree of distress that can be exacerbated by the reactions to their appearance the patient may have experienced. A patient may experience the loss of an individual sense of self which in turn can increase anxiety levels especially when addressing the complexities of HIV associated facial lipoatrophy (Power et al, 2003)

Previously reported studies of PLLA treatment for HIV lipoatrophy were often focused on mixed anti-ageing patient cohorts and did not offer a clear treatment plan for this challenging facial deformity (Barton et al, 2006). A pilot clinical study in our unit demonstrated that Poly-L-lactic acid (PLLA) injections were well tolerated and increased skin thickness over the buccal fat pads. However as many as 52% of patients did not achieve resolution of their facial disfigurement

The changes in our treatment protocol that helped to achieve an increase in the perceived resolution of the facial changes to 90% include using two vials per session (one vial per each side of face), a significant expansion of the facial areas treated and an increase of the number of sessions according to lipoatrophy severity.

The presence of facial lipohypertrophy, previous facial interventions and female sex are identified as factors affecting treatment planning.

Our protocol allows constructing a realistic treatment plan, managing the expectations of patients with HIV associated lipoatrophy as well as minimising the side effects of the treatment. Allowing the patient time to articulate their individual experiences is essential in supporting them on the emotional journey of restoring their self-confidence as visually their face responds to the treatment.

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