

Efficacy of HESA-A in the Treatment of Chronic Plaque Type Psoriasis

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Introduction

HESA-A is of herbal-marine origin manufactured by Osveh Drug Company and is available in Iran¹.

HESA-A includes mineral constituents (50%), organic constituents (45%) and water (5%). The mineral constituents are a mixture of calcium carbonate, magnesium sulfate, potassium sulfate, sodium sulfate, magnesium phosphate, potassium phosphate and sodium phosphate. Low percent of other elements such as zinc, copper, magnesium, selenium and strontium are found in salt or complex forms in HESA-A compound².

Previous reports have shown many different effects for HESA-A such as hepatoprotective effects against thioacetamide-induced liver damage in rabbits³, anticancer effects in patients with metastatic colon cancer⁴ and improvement in the

vision of breast cancer patients suffering from choroidal metastasis⁵.

Psoriasis is one of the most common chronic and inflammatory diseases with polygenic predisposition combined with triggering environmental factors. Keratinocytes proliferation, alteration in dermal capillary vasculature and epidermal and dermal infiltration of lymphocytes and neutrophils are characteristic features of this disease⁶. Although the exact pathogenesis of this disorder is still unknown, reducing the inflammation is an important target of psoriasis management.

Despite widespread use of alternative and particularly herbal medications in the treatment of psoriasis, there is limited scientific and statistical data demonstrating efficacy, interactions and side effect profiles of these remedies.

Abstract

Background: Psoriasis is a common inflammatory skin disorder. There has been considerable interest in herbal medicine as a treatment for psoriasis. In a previous study HESA-A, a marine-herbal drug, was found to be beneficial in the treatment of psoriasis vulgaris. The aim of this study was to assess the efficacy and tolerability of HESA-A in patients with psoriasis.

Methods: Nineteen patients with a mean PASI score of 13.04 ± 6.14 (min=3.90, max=27.70) were recruited to receive daily dosage of 30 mg/kg of HESA-A tablets for at least 4 weeks. The patients were followed every two weeks for determining PASI score changes and drug side effects until the end of the study.

Result: At the end of the study, the mean PASI score of the patients reduced to 9.60 ± 5.30 (min=0.90, max=19.1). PASI score reduced in 14 patients (73.7%) and increased in 5 patients (26.3%) during the study. Two patients achieved 75 to 100% improvement in PASI score and two achieved 50 to 75%. In 10 patients (52.6%), 1 to 50% improvement in the PASI score was detected. There was a statically significant correlation between the duration of treatment and PASI improvement. (P-value = 0.024)

Conclusion: Although this drug was very safe and tolerable, our study did not find rapid and acceptable efficacy in the treatment of chronic plaque psoriasis as shown in a previous study. According to our findings, HESA-A was more effective when used for a prolonged time and in respect of the safety profile of HESA-A, we can use this drug as a maintenance or adjuvant therapy for chronic plaque psoriasis in longer terms. (*Iran J Dermatol 2010;13: 16-19*)

Key words: psoriasis, HESA-A, herbal medicine.

We designed this study to investigate the clinical usefulness, safety and adverse effects of the new herbal-marine drug, HESA-A, in the treatment of psoriasis.

Patients and Methods

Study design

This one-arm clinical trial was conducted with a group of 19 patients with chronic plaque type psoriasis. Patients were selected from dermatology clinics affiliated to Shahid Beheshti University of Medical Sciences between January 2007 and March 2008. Each patient was confirmed by histopathological study and then demographic information of patients was recorded and their PASI score was determined. This study was conducted according to the principles of the declaration of Helsinki and was approved by the Medical Ethics Review Board of the Skin Research Center of Shahid Beheshti University of Medical Sciences. Patients signed an informed written consent before enrollment in the study.

Exclusion criteria

Patients under the age of 20 and above 70 years, pregnant or lactating women, patients with a history of allergy to marine foods, those with skin infection and those receiving any systemic antipsoriatic treatment since 1 month ago and/or topical treatment since 2 weeks ago were excluded from this study.

Intervention

Patients received HESA-A tablets 30 mg/kg daily for at least 4 weeks. Treatment was continued for a maximum of 30 weeks if clinical response was observed.

Assessments

All examinations and assessments were performed by a single dermatologist. Patients were assessed at the baseline and then every 2 weeks. PASI scores were re-determined and patients were reassessed about compliance and drug side effects at each follow-up visit. Cell blood count, liver function test, triglyceride, cholesterol, blood urea nitrogen, creatinine and urinalysis were performed at baseline and at weeks 4, 8 and at the end of the study.

PASI grading by convention

- 1-10 Mild
- 10-20 Moderate
- > 20 Severe

PASI 75: At least 75% improvement in baseline PASI

PASI 50: At least 50% improvement in baseline PASI

Analysis

The statistical software JMP 7.0.1 (2007 SAS Institute Inc.) was used for statistical analysis. P-value < 0.05 was considered statistically significant.

Results

Nineteen patients including 10 females (52.6%) and 9 males (47.4%) were enrolled in this interventional study. Mean age of the patients was 36 years (min=21, max=67). Twelve patients had moderate, 5 patients had mild and 2 had severe psoriasis vulgaris with a mean duration of 2 years and a mean PASI score of 13.04 ± 6.14 (min=3.90, max=27.70).

At the last follow-up visit of the patients, the mean PASI score of the patients reduced to 9.60 ± 5.30 (min=0.90, max=19.1) (Table 1).

PASI score reduced in 14 patients (73.7%) and increased in 5 patients (26.3%) during the study. Two patients achieved 75 to 100% improvement in PASI score and two achieved 50 to 75%. According to these findings, 10.5% of the patients achieved PASI 75 and 21% achieved PASI 50. In ten patients (52.6%) 1 to 50% improvement in PASI score was detected (Figure 1).

Mean duration of the treatment was 87 days (min=30, max=216). There was a statically significant correlation between the duration of treatment and PASI improvement using Pearson correlation test (P-value = 0.024). The correlation coefficient between these parameters was 0.516 (Figure 2).

There was no statistically significant difference in PASI improvement between sex groups using Mann-Whitney test (P-value = 0.97).

Safety profile

None of the patients experienced any adverse events during the study. The results of blood tests, and urine analysis indicated that the liver and renal functions of all of these patients were normal during and after the trial. Furthermore, the lipid profile was significantly improved in one of our male patients.

Discussion

At the present time, there is no definite therapy for psoriasis. To find an effective and completely safe drug, numerous studies have been performed without success. Furthermore, the available drugs have many adverse effects. The most important side

Table 1. Efficacy data in patients treated with HESA-A for psoriasis

| PASI | Mean | Median | Standard Deviation | 95% Confidence Interval for mean | | Min | Max |
|-------------|-------|--------|--------------------|----------------------------------|-------------|------|-------|
| | | | | Lower bound | Upper bound | | |
| First visit | 13.04 | 13.20 | 6.14 | 10.08 | 15.99 | 3.90 | 27.70 |
| Last visit | 9.60 | 10.80 | 5.30 | 7.05 | 12.15 | 0.90 | 19.1 |

effect is organ toxicity which may result in severe morbidity and even mortality. Therefore, finding a new drug with acceptable efficacy and little toxicity is valuable.

Over 40% of the patients with psoriasis report previous or current use of one or more forms of alternative medicines, and herbal remedies are one of the popular ones. The use is related to disease duration and severity and inefficiency of therapy prescribed by physicians in the patient's own opinion ⁷.

Although herbal medications have been used for centuries for treating skin diseases, the academic evaluation of these remedies has recently attracted attention. Many different herbal medications have been evaluated in psoriasis with conflicting results. Chinese researchers have investigated their herbal medicine efficacy and safety in treating psoriasis. They proposed that these drugs may have anti-inflammatory properties, modulating cytokine production and inhibiting angiogenesis which rationalize their use in psoriasis ⁸. We hypothesized that HESA-A, a drug of natural origin with anticancer effects shown in previous studies, may have anti-inflammatory and antiproliferative properties which could be used in the treatment of psoriasis ²⁻⁴.

Moreover, it has been shown that the presence of magnesium, selenium or strontium in HESA-A composition can be effective on cytokine modulation and wound healing ². This effect could also be useful in cytokine disturbance and immune cell disorganization present in psoriasis.

We designed this study to assess the clinical benefit and safety of HESA-A monotherapy in patients with chronic plaque psoriasis and to provide evidence-based research for this new marine-herbal therapy for psoriasis ⁹.

Although a previous study about this drug performed by Ahmadi et al, ¹ showed rapid and good efficacy (complete remission in 64.2% of the patients) and safety of this drug in chronic plaque psoriasis, only 2 (10.5%) out of 19 patients achieved a PASI score of 75 in our study. That study had some limitations. First, psoriasis severity

was not determined precisely at the beginning of the study and improvement per individual patient was not obvious. Second, the severity of psoriasis was assessed by using a conventional grading system, not by PASI scoring, which was not an accurate indicator of psoriasis severity. Third, statistical analysis and P-value was not mentioned.

Although our study showed partial reduction in mean PASI score of the patients, a PASI score of 50 was only achieved in 4 patients (21%). However, the dosage of HESA-A was 50 mg/kg/day in the previous study which was higher than our given dose. Hence, further double blind clinical trials with larger sample sizes should be designed to evaluate HESA-A efficacy in psoriatic patients.

The chemical drugs such as methotrexate, cyclosporine, acitretin, or biologic drugs such as infliximab seems to be more effective systemic therapies for the induction of remission in moderate to severe cases,¹⁰⁻¹⁵ The correlation between the duration of treatment and PASI improvement which was found in this study could suggest that herbal drugs like HESA-A are more effective when used for a prolonged time. According to our findings and the safety profile of HESA-A, we might be able to use this drug as a maintenance or adjuvant therapy for chronic plaque psoriasis in longer terms.

It is important to note the limitations of this study. First, we did not have a control group for accurate judgment. Second, the number of the tested patients was relatively low and third, there was no systematized follow-up plan after discontinuation of therapy. Therefore, future structured study to bypass the mentioned limitations would be beneficial to elucidate the efficacy of HESA_A in the treatment of psoriasis.

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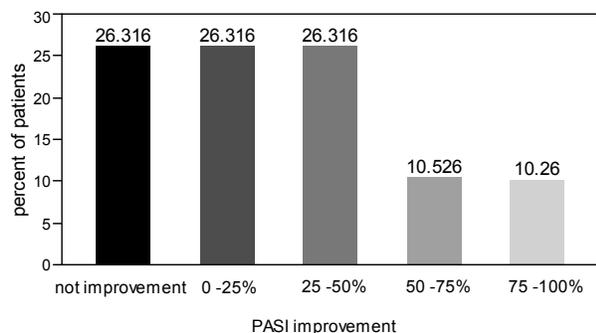


Figure 1. Distribution of the PASI score improvement at the last follow-up visit

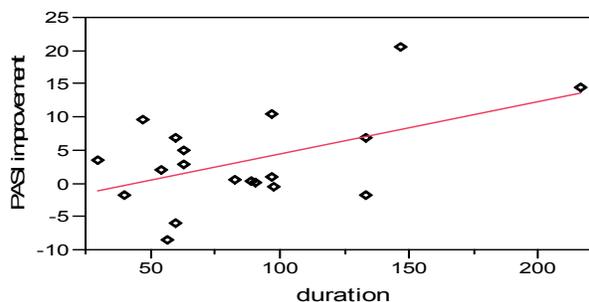


Figure 2. Correlation between treatment duration and PASI improvement

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