

## Relationship between disease severity and fetuin-A levels in patients with psoriasis

Sir,

Psoriasis is a chronic inflammatory disease with associated comorbidities such as psoriatic arthritis, cardiovascular disorders and inflammatory bowel diseases. Psoriasis results from an interplay of genetic susceptibility, skin barrier defect and dysregulation of innate and adaptive immunity.<sup>1</sup>

Fetuin-A is a negative acute-phase protein. Its level decreases during acute and chronic inflammation, suggesting that it may have an anti-inflammatory effect. This is possibly due to inhibition of release of active high-mobility group box protein 1 and subsequent cytokine expression.<sup>2</sup>

This cross-sectional study was conducted at Dermatology, Andrology and Sexually Transmitted Diseases and Medical Biochemistry Departments, Menoufia University, Shebin EL-Kom, Egypt.

The aim of this study was to evaluate the serum level of fetuin-A in patients with psoriasis vulgaris compared to

controls and to correlate it with the disease severity.

Forty patients with variable degrees of psoriasis severity who were assessed by psoriasis area and severity index score were selected. Patients with any skin disease other than psoriasis vulgaris were excluded.

Forty healthy and age- and gender-matched subjects were enrolled as a control group. A written consent form approved by a local ethical research committee was obtained from every participant before enrolling in the study.

The serum level of fetuin-A was measured by enzyme-linked immunosorbent assay. The statistical analysis was done using a Statistical Package of Social Science (SPSS) version 22. The following statistics were calculated: mean ( $\bar{X}$ ), standard deviation (SD), range, number (n), percentage (%), Student's *t*-test (*t*), chi-square test ( $\chi^2$ ) and Pearson's correlation test (*r*). *P* value < 0.05 was considered statistically significant.

Basic demographic and clinical profiles of the subjects are given in Table 1. Mean serum levels of fetuin-A was  $198.88 \pm 31.61$  mg/dL (range 142.9–248.2 mg/dL) among the cases compared to  $480.44 \pm 36.23$  mg/dL (range 229.7–551.1 mg/dL) in the control group ( $P < 0.001$ ). There was no significant correlation between serum level of fetuin-A and psoriasis area and severity index score ( $r = -0.18$  and  $P = 0.274$ ). Mean serum level of high-sensitive C-reactive protein was  $4.44 \pm 1.11$  mg/dL among the cases (range 1.6–5.9 mg/dL) compared to  $1.55 \pm 0.64$  mg/dL (range 0.63–2.54 mg/dL) among the control group ( $P < 0.001$ ).

Gerdes *et al.* reported that serum fetuin-A levels were elevated in the control group compared with patients with psoriasis.<sup>3</sup> They hypothesized that inflammation in patients with psoriasis resulted in decreased fetuin-A levels and inflammatory mediators like interleukin-6 and interleukin-1 $\beta$  can reduce fetuin-A gene expression.

Ataseven *et al.* reported that serum fetuin-A levels were significantly decreased in psoriatic patients compared to healthy control group members.<sup>4</sup> They also concluded that the serum level of fetuin-A did not correlate with the psoriasis area and severity index score. Uysal *et al.* reported a significant positive correlation between the mean serum level of fetuin-A and psoriasis area and severity index score and also suggested that there is a possible link between the underlying systemic inflammatory pathways involved in psoriasis, fetuin-A levels and the development of comorbid diseases.<sup>1</sup>

**Table 1: Basic demographic and clinical profile of the subjects**

Parameter	Cases (n=40)	Controls (n=40)	Test and p
Age (years)			
Range	18-70	14-66	$p=0.148$
Mean $\pm$ SD	$42.65\pm 14.25$	$38.00\pm 14.24$	
Gender, n (%)			
Man	18 (45)	15 (37.5)	$p=0.496$
Woman	22 (55)	25 (62.5)	
Duration of illness (years)			
Range	0.5-25		
Mean $\pm$ SD	$6.51\pm 6.19$		
Family history of disease, n(%)			
Positive	14 (35.0)		
Negative	26 (65.0)		
PASI score			
Range	4.5-25		
Mean $\pm$ SD	$11.18\pm 4.65$		
Severity, n(%)			
Mild	9 (22.5)		
Moderate	15 (37.5)		
Severe	16 (40)		

SD: standard deviation, n: number, PASI: psoriasis area and severity index

In our study, the serum level of high-sensitive C-reactive protein was higher among cases compared with those in the control group. Ataseven *et al.* reported an inverse relationship between serum levels of fetuin-A and C-reactive protein in the serum of psoriatic patients.<sup>4</sup> Uysal *et al.* reported that the serum C-reactive protein level increased in psoriatic patients more so in severe cases.<sup>1</sup> Tumour necrosis factor -alpha and interleukin-6 were postulated to contribute to the formation of psoriatic and atherosclerotic plaques as well as the increase in the release of C-reactive protein.<sup>5</sup>

Our results showed that serum fetuin-A levels are low in patients with psoriasis however, it is not related to disease severity. Further studies on the role of fetuin-A may throw more light on the pathogenesis of psoriasis.

#### Limitations of the study

The main limitation of this study was the small sample size followed by the fact that the patient selection did not reflect the general population, as the study was done in a single clinic.

#### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) have given their consent for their images and other clinical information to be reported in the journal. The patients understands that their names and initials will not be published and due efforts will be made to conceal their identity but anonymity cannot be guaranteed.

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Nil.

#### Conflicts of interest

There are no conflicts of interest.

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