

SERUM ELAFIN AS A MARKER OF SEVERITY IN SKIN PSORIASIS AND PSORIATIC ARTHRITIS

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INTRODUCTION

Psoriasis is believed to have multifactorial pathogenesis in which genetic, environmental, and immunological factors contribute to the disease. Elafin, an anti-inflammatory serine protease inhibitor, is one of the natural AMPs and is generated by immune cells, keratinocytes, and epithelial cells. Elafin is hardly present in healthy skin. However, it is highly expressed in psoriatic patients' urine, sputum, and epidermis. Psoriatic Arthritis (PsA) is an inflammatory musculoskeletal illness that can be associated with all types of psoriasis of varying severity.

AIM OF THE WORK

The present study assessed serum Elafin in psoriatic patients, and its relation to the severity of skin disease as well as its association with Psoriatic Arthritis (PsA).

PATIENTS AND METHODS

This cross-sectional study included forty psoriatic patients and forty healthy individuals. Serum Elafin was measured in all subjects using ELISA (Enzyme-Linked Immunosorbent Assay), skin disease was assessed using the PASI score, and psoriatic arthritis was assessed using the DASPA score.

RESULTS

Serum Elafin was significantly higher among psoriatic patients than controls (mean of 1282.5±571.3 pg/ml vs. 1067.5±244.1 pg/ml; *P*=0.005). There was a significant positive correlation between serum Elafin concentration and PASI score. In PsA patients, no meaningful correlation could be established between serum Elafin and the presence of PsA or its activity:

Table 1: Comparison between serum Elafin (pg/ml) in cases and control groups

Concentration of Serum Elafin (pg/ml)	Cases (n = 40)	Control (n = 40)	Mann Whitney test	p
Min. – Max.	899.0–3600.0	651.0–1854.0	509.0*	0.005*
Mean ± SD.	1282.5±571.3	1067.5±244.1		
Median (IQR)	1098.5 (1034.5 – 1217.0)	1015.5 (934.5 – 1124.0)		

Table 2: Diagnostic performance for the concentration of serum Elafin to discriminate patients from control (n = 40)

	AUC	p	95% C.I	Cut off	Sensitivity	Specificity	PPV	NPV
Concentration of serum ELAFIN (pg/ml)	0.682	0.005*	0.564–0.800	>1005	80.0	50.0	61.5	71.4

Table 3: Relation between the concentration of ELAFIN with different parameters in psoriatic patients (n = 40)

Parameters	No.	Concentration of serum ELAFIN(pg/ml)		Test of Sig.	p
		Mean ± SD.	Median (Min. – Max.)		
Severity of skin psoriasis					
Mild	13	1059.2±93.47	1075.0 (907.0 – 1219.0)	H= 6.296*	0.043*
Moderate	14	1300.9 ± 674.1	1154.0 (899.0 – 3600.0)		
Severe	13	1486.0 ± 678.5	1193.0 (1029.0–3394.0)		
CASPAR criteria					
Negative (No PSA)	33	1315.1 ± 614.1	1169.0 (907.0 – 3600.0)	U= 78.00	0.192
Positive (PSA)	7	1129.1 ± 276.8	1075.0 (899.0 – 1729.0)		
Disease activity of psoriatic arthritis					
Low	3	1059.7 ± 88.01	1075.0 (965.0 – 1139.0)	U= 1.000	1.000
Moderate	3	1240.0 ± 434.3	1092.0 (899.0 – 1729.0)		
High	1	1005.0†			

CONCLUSION

Serum Elafin concentration can be used as a potential biomarker for skin psoriasis and its severity. However, No evident relation between serum Elafin concentration and the presence or activity of PsA.