Assessment of the serum level of soluble CD147 in patients with multiple myeloma

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INTRODUCTION

Multiple myeloma (MM) is a clonal plasma cell malignancy characterized by heterogeneous clinical outcomes. Although significant therapeutic advancements have improved survival, the disease is still considered fatal due to its complex and heterogeneous nature. Patients exhibit a wide range of clinical outcomes, and the eventual development of drug resistance and disease relapse is nearly universal. There is a critical need for non-invasive biomarkers that can accurately reflect disease burden, improve risk stratification, and predict therapeutic response. CD147, a transmembrane glycoprotein involved in tumor proliferation, metabolism, and drug resistance, has been identified as a promising candidate; however, the clinical utility of its soluble form (sCD147) is not well-established.

AIM

This study aimed to evaluate the serum levels of soluble CD147 (sCD147) in patients with multiple myeloma and to determine its role as a prognostic marker for disease outcome.

METHOD

A prospective, case-control study was conducted at Ain Shams University hospitals. Serum sCD147 levels were quantified using a sandwich ELISA in 30 adult patients with MM (including newly diagnosed and relapsed cases) and 30 age- and sex-matched healthy controls. Patients were followed prospectively for six months to assess clinical outcomes and response to therapy according to IMWG criteria.

CONCLUSIONS

Serum sCD147 is a highly promising, non-invasive biomarker in multiple myeloma. It accurately reflects tumor burden, correlates with adverse clinical features, and strongly predicts the response to initial therapy.

RESULTS

Serum sCD147 levels were significantly higher in patients with multiple myeloma compared to the healthy control group (Median 750.1 ng/mL vs. 50.19 ng/mL, P < 0.001). Logistic regression confirmed that a higher baseline sCD147 was a statistically significant predictor of not achieving CR (OR = 1.007, p =.007).

Parameter	At Diagnosis (Baseline)		At 3-Month Follow-Up		At 6-Month Follow-Up	
	Rho	p-value	*Rho*	p-value	*Rho*	p-value
Hemoglobin (g/dL)	-0.135	0.476	-0.347	0.061	-.488**	**0.006**
Creatinine (mg/dL)	0.313	0.092	0.339	0.067	.425*	**0.019**
Creatinine Clearance	-0.304	0.103	-0.306	0.1	-.394*	**0.031**
Calcium (mg/dL)	-0.116	0.54	-0.006	0.975	0.138	0.467
Total Proteins (g/dL)	0.179	0.345	.503**	**0.005**	.479**	0.007
Albumin (g/dL)	-0.042	0.824	-0.264	0.158	-0.204	0.279
LDH (U/L)	.583**	**0.001**	0.317	0.088	0.251	0.182
Beta-2 Microglobulin (mg/L)	.450*	**0.013**	.543**	**0.002**	.560**	**0.001**
SPEP M-Spike (g/dL)	0.193	0.306	.647**	<.001	.859**	<.001
Initial Aspirate (%)	0.080	0.679	.647**	<.001	.862**	<.001

Spearman's Correlations Between Baseline sCD147 Levels and Clinical Parameters at Diagnosis, 3 Months, and 6 Months

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REFERENCES

Abbassy HA, Ghallab OM, Imbaby SA., et al. (2025). STUDY OF BSG (BASIGIN, CD147) Gene Expression In Egyptian Patients With Acute Myeloid Leukemia. *ALEXMED EPosters*, *7*, 48–49.
Abdallah, N. H., Nagayama, H., Takahashi, N., et al. (2023). Muscle and fat composition in patients with newly diagnosed multiple myeloma. *Blood Cancer Journal*, *13*(1), 185.
Agafonova, A., Prinzi, C., Trovato Salinaro, A., et al. (2025). Breaking Barriers: The Role of the Bone Marrow Microenvironment in Multiple Myeloma Progression. International Journal of Molecular Sciences, 26(15), Article 7301. https://doi.org/10.3390/ijms26157301