



The 65th ASH Annual Meeting Abstracts

ONLINE PUBLICATION ONLY

654.MGUS, AMYLOIDOSIS AND OTHER NON-MYELOMA PLASMA CELL DYSCRASIAS: CLINICAL AND EPIDEMIOLOGICAL**Normative Data of Beta-2-Microglobulin and Plasma Proteins from an Agrarian Indian Community By a Door-to-Door Survey: Results of Simple (IMAGE-002B) Study**

Yash Vashishth, BMBS¹, Uday Yanamandra, MDDM², Saurabh Bobdey³, Vaibhav Sharma⁴, V K Bhatti³, J Muthukrishnan, MD⁵, Pankaj Malhotra, MD⁶, Velu Nair, MBBS, MD⁷

¹Internal Medicine & Hematology, Armed Forces Medical College, Pune, India

²Internal Medicine and Hematology, Armed Forces Medical College, Pune, IND

³Community Medicine, Armed Forces Medical College, Pune, India

⁴Armed Forces Medical College, Pune, India

⁵Internal Medicine, Armed Forces Medical College, Pune, India

⁶Department of Clinical Hematology, Postgraduate Institute of Medical Education and Research, Chandigarh, India

⁷Apollo Hospitals Ahmedabad, Detrojrampura, IND

Introduction: Most diagnostic laboratories in India follow the reference intervals given in Western literature whose Caucasian reference population is entirely different from the Indian ethnic population (viz., dietary habits, lifestyle, socioeconomic status, ethnicity, and environmental factors).

Objectives: To collate normative data of beta-2-microglobulin ($\beta 2M$) and plasma proteins from an otherwise healthy population from an agrarian Indian Community. The secondary objectives were to evaluate the correlation of $\beta 2M$ levels with age, gender, and BMI of these individuals.

Methods: A cross-sectional study was conducted in an agrarian village in India with a 24.76Km perimeter and 4588.3 hectares with an 89.2% population coverage for adults (>45y) spending 12096 man-hours. This was a part of SIMPLe (Screening Intervention for Myeloma and Prevention of Lifestyle diseases) study registered vide CTRI/2023/03/051220 after obtaining informed consent. Demographic details, medical history, and blood samples were collected after a thorough medical examination to ascertain the normal health status of the study participants. Hemogram, biochemistry (Liver and renal function tests), $\beta 2M$, and serum protein electrophoresis (SPEP) were performed in all individuals. Only individuals with normal renal and liver function tests were included in the final analysis. Bivariate analysis (Fit Y by X) was done to study the correlations. Any p value < 0.05 was considered significant. The data was analyzed using JMP ver. 16.0.0.

Results: A total of 850 individuals were included in this community-based door-to-door survey. The mean age of the study population was $57.6 \pm 10.5y$, with a slight female predominance (56.3%). The distribution of $\beta 2M$ and various plasma proteins is mentioned in Table 1. The $\beta 2M$ significantly differed between males and females (χ^2 2-8.58; dF-1; p-0.0034). On bivariate analysis, $\beta 2M$ was significantly associated with age (correlation coefficient: 0.31; p<0.0001), and BMI (correlation coefficient -0.07; p-0.023).

Conclusion: The data obtained from our studies would act as the first step in collating normative data for $\beta 2M$ and plasma proteins from Indian community.

Disclosures No relevant conflicts of interest to declare.

Table 1: Distribution of the plasma proteins in the study population

	N	Mean	Std Dev	Min	Max	CV	Median
Beta-2-Microglobulin	850	2205.88	889.14	282	14030	40.30	2055.5
Albumin, Globulin Ratio	838	1.62	0.3	0.45	2.88	18.57	1.6
Alpha 1 Globulin	845	0.22	0.045	0.09	0.58	20.32	0.22
Alpha 2 Globulin	845	0.62	0.13	0.28	1.36	21.47	0.61
Beta 1 Globulin	845	0.43	0.06	0.23	1.06	15.42	0.43
Beta 2 Globulin	845	0.33	0.09	0.06	1.03	26.91	0.33
Gamma Globulin	845	1.16	0.3	0.44	3.17	25.73	1.15
Serum Albumin	845	4.4	0.36	2.22	5.43	8.39	4.42
Total Protein	845	7.19	0.48	4.83	9.24	6.71	7.2

Figure 1

<https://doi.org/10.1182/blood-2023-191125>

Downloaded from http://ashpublications.net/blood/article-pdf/142/Supplement_1/6760/2189721/blood-3356-main.pdf by guest on 08 June 2024