**BIOMARKER REFERENCE VALUES AMONG CHEST PAIN UNIT PATIENTS**

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Background: Diverse biomarkers have been studied to determine their relationship to cardiovascular disease. However, reference values have not been reported relative to age, gender, and race in a diverse population among chest pain unit patients. Therefore, we compared the reference values of new and established biomarkers in this population.

Methods: Biomarker analysis were performed at Siemens Healthcare Diagnostic Laboratory in chest pain unit patients (n = 150, age 46.5 ± 10.6 years; 57.3% female, 68% Black) without a prior history of cardiovascular disease (CVD). Risk factors included hypertension (44%), smoking (30%), diabetes (15%), hyperlipidemia (25%), and CVD family history (43%).

Results: Mean ± SD and the range of values are listed in table. Age did not show a significant relationship with any biomarkers, except Cystatin C (0.70±0.18 for <40 years, 0.77±0.16 for 40-60 years, and 0.8±0.21 for >60 years old, p<0.05 by ANOVA).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Gender | | Race | |
|  | Female | Male | Black | White |
| Uric acid  (mg/dL) | 4.44 ± 1.25\* (1.8 – 10.1) | 6.00 ±1.45 (3.4 – 9.9) | 5.01 ± 1.46 (1.8-10.1) | 5.31 ±1.69 (2.6-9.9) |
| Homocysteine  (umol/L) | 11.3 ± 4.07 (5.8-29.8) | 12.3 ±2.93 (7.4– 24.3) | 12.2 ± 4.05\* (5.8-29.8) | 10.7 ±2.4 (7.1-18.2) |
| Cystatin C  (mg/L) | 0.72 ± 0.17\* (0.41 – 1.3) | 0.80 ±0.17 (0.47 – 1.25) | 0.775 ± 0.18 (0.41 -1.35) | 0.76 ±0.16 (0.47-1.25) |
| MPO  (pmol/L) | 666 ± 95 (155-5001) | 669 ±93 (139-5001) | 594 ± 768 (139-5001) | 820 ±1212 (171-5001) |
| IL-2  (IU/mL) | 344 ± 12\* (150-744) | 394 ± 17 (180-1096) | 348 ± 128\* (150-1096) | 401 ±164 (160-1074) |
| IL-6  (pg/mL) | 3.81 ± 4.05 (1.9 – 29.1) | 4.18 ±4.84 (1.9 – 31.7) | 4.08 ± 4.75 (1.9-31.7) | 3.73 ±3.56 (1.9-22.3) |
| TNF-Alpha  (pg/mL) | 11.1 ± 3.53\* (5.3 – 24.0) | 12.6 ±3.34 (6.6-23.6) | 11.6 ± 3.6 (5.3-24) | 12 ±3.35 (5.5-19.7) |

\*Denotes significant (p≤.05) difference between means

Conclusion: The relationship between biomarker and age, gender, and race varies with gender having the most consistent relationship. The clinical utility of these biomarkers in risk stratifying CDU patients deserves further study.