INTRAVENOUS COCAINE ADMINISTRATION RESULTS IN TRANSIENT DECREASE IN SERUM LEVELS OF INTERLEUKIN-6 (IL-6), SOLUBLE CD40 LIGAND (sCD40L) AND MONOCYTE CHEMOATTRACTANT PROTEIN-1 (MCP-1)

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Objective:To examine the acute effects of intravenous cocaine on biomarkers of vascular inflammation (VI) in human subjects

Background: Chronic cocaine use is associated with endothelial dysfunction and evidence of VI. Its acute effects on VI are not known.

Methods & Results:Eleven chronic cocaine users (mean age 45.7 ±2.6 yrs) received IV cocaine at a dose of 0.36 mg/kg in a controlled environment. Serum was collected at baseline, 6 h, 24 h and 6 days post infusion. Serum IL-6, sCD40L, MCP-1 and sICAM-1 were analyzed by ELISA. There was a transient but significant decrease in sCD40L and MCP-1 levels (table). IL6 levels decreased by 76% by day 6

(non-significant).

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| **Biomarker** | **Baseline levels** | **6h after admin** | **24h after admin**  | **6 days after admin** |
| IL6 (pg/ml) | 30.6 ± 46.7 | 21.4 ± 29.2 | 22.5 ± 57.9 | 7.8 ± 12.6 |
| sCD40L (ng/ml) | 9.9 ± 4.2 | 5.1 ± 4.3 | 1.7 ± 2.6\* | 11.0 ± 3.0 |
| MCP-1 (pg/ml) | 254.0 ± 181.9 | 243.0 ± 191.2 | 121.13 ± 34.3 | 191.2 ± 134.5\*\* |
| sICAM-1 (ng/ml) | 222.9 ± 82.7 | 230.9 ± 84.0 | 218.8 ± 96.6 | 229.9 ± 79.1 |
|  | **\* p = 0.01** | **\*\* p = 0.03** |  |

Conclusion: Intravenous cocaine significantly decreases the serum levels of markers of vascular inflammation. This is in distinct contrast to the known pro-inflammatory effects of chronic-cocaine use; the mechanisms and significance of this finding needs further studying.