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oxygen2001 — 6th ANNUAL MEETING — THE OXYGEN SOCIETY

ABSTRACT FORM

NOTE: All abstracts must be accompanied by completed registration forms and fees. The first author of this abstract must present the work at the meeting. **An original of this form (not a fax) must be received by September 3.** Abstracts will be reproduced exactly as submitted.

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✓ MARKERS OF OXIDATIVE STRESS LINKED TO INCREASED RISK OF CARDIOVASCULAR DISEASES IN CHRONIC HEMODIALYSIS PATIENTS.

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Patients with end-stage renal diseases undergoing hemodialysis often develop atherosclerosis and, in addition, more than 50% of these patients die from cardiovascular complications. Increased oxidative stress as induced by hemodialysis per se is thought to be strongly associated with the pathogenesis of vascular injury as well as the progression of atherosclerosis.

In a study conducted on 40 hemodialyzed patients (mean age : 58 years), we have measured as routine assays 6 blood markers of oxidative stress : vitamin C, vitamin E (as vit E/cholesterol ratio), lipid peroxides (Oxystat, Biomedica Gruppe), oxidized lipoproteins (ox-LDL, Mercodia), antibodies against oxidized LDL (Ab-ox-LDL, Biomedica Gruppe) and homocysteine (HPLC procedure). A large number of studies have shown that abnormal values of such markers were closely linked to increased risk of cardiovascular diseases. When compared to references values (control group consisted of 123 healthy individuals, mean age : 50 years), we found that 11/40 patients (27.5%) presented vitamin C values below 4 µg/mL, 17 /40 patients (42.5%) had levels in oxidized LDL higher than 170 UI/L, and that more 80% of patients exhibited plasma concentrations in homocysteine higher than 20 µmol/L. Only 3/40 patients (7.5%) presented low levels in vitamin E. Less than 2% of patients presented elevated concentration in lipid peroxides and in titers of Ab-ox-LDL.

In conclusion, a regular monitoring in most of these parameters could therefore help the medical staff to regulate the imbalance in pro-oxidant and antioxidant species in order to prevent cardiovascular complications in hemodialyzed patients.

SUBJECT AREAS FOR ABSTRACTS

(Must circle to pick area to be accepted)

1. Free radical chemistry
2. Metals, metalloproteins and redox reactions
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6. Signal transduction and gene expression

7a. Nitric Oxide: Physiology/Medicine

7b. Nitric Oxide: Chemistry/Biochemistry

8. Oxidation of macromolecules - DNA, lipid, protein, carbohydrate
9. Tissue/cell targets and reactions
10. Cell cycle and apoptosis
11. Clinical topics
12. Environmental oxidants
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15. Radiation
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