

The average means (M) and standard deviations (SD) were calculated. For the statistical analysis we used the Student's t-test.

**RESULTS:** As presented in Table 1, a significant elevation in almost all oxidative stress markers were observed in ESA poor responder patients compared with good responder ones.

Table 1. Oxidative stress markers of ESA poor responder and good responder HD patients.

| Oxidative stress markers | HD patients             |                          | p        |
|--------------------------|-------------------------|--------------------------|----------|
|                          | Hb <11 g/dL<br>(n = 52) | Hb ≥ 11<br>g/dL (n = 62) |          |
| TPAe, $\mu$ kat/g Hb     | 597.2 $\pm$ 38.8        | 467.6 $\pm$ 43.2         | < 0.0001 |
| SH-groups, mmol/L        | 22.25 $\pm$ 0.78        | 22.3 $\pm$ 0.73          | 0.68     |
| OSI                      | 1.87 $\pm$ 0.31         | 1.72 $\pm$ 0.32          | 0.01     |
| MDAe, $\mu$ mol/L        | 748.9 $\pm$ 26.0        | 693.9 $\pm$ 57.0         | < 0.0001 |
| PH, %                    | 29.91 $\pm$ 2.31        | 21.35 $\pm$ 2.23         | < 0.0001 |
| CTs, $\mu$ kat/L         | 131.32 $\pm$ 10.29      | 111.6 $\pm$ 7.8          | < 0.0001 |

**CONCLUSIONS:** Our results have demonstrated the oxidative imbalance induced by the ESA hyporesponsiveness in HD patients. The use of antioxidant supplements might be a possible strategy to improve the ESA response in HD patients.

SP374

#### OXIDATIVE STATUS IN HEMODIALYSIS PATIENTS WITH ERYTHROPOIETIN HYPORESPONSIVENESS ANEMIA

Lesya Korol<sup>1</sup>, Natalia Stepanova<sup>1</sup>, Volodymyr Novakivskyi<sup>2</sup>, Irina Shifris<sup>1</sup>, Lyudmila Migal<sup>1</sup>

<sup>1</sup>SI «Institute of Nephrology of the National Academy of Medical Sciences», Kyiv, Ukraine, Ukraine and <sup>2</sup>LLC "Fresenius Medical Care Ukraine" Medical Centre, Cherkasy, Cherkasy Oblast, Ukraine, Ukraine

**INTRODUCTION:** Nowadays, a regular supplement of erythropoietin-stimulating agents (ESA) is standard therapy in the treatment of anemia in hemodialysis (HD) patients. But, the problem of ESA hyporesponsiveness in the HD patients has not been solved yet. The aim of the present study was to assess the relationship between the responsiveness to ESA and oxidative stress in the HD patients.

**METHODS:** 104 HD patients were included in this cross-sectional observational study. The mean age in the patient population was 52.6  $\pm$  4.4. All patients had been undergoing regular HD; its average duration was 52.8  $\pm$  16.2 months.

The patients included 52 poor responders (Hb < 11 g/dL and ESA dose > 300 IU/kg/week) and 62 good responders to ESA therapy (Hb > 11 g/dL and ESA dose < 300 IU/kg/week). Classification of the patients into poor or good responder was performed in accordance with the European Best Practice Guidelines.

Total peroxidase activity in erythrocytes (TPAe), concentrations of malondialdehyde in erythrocytes (MDAe) and sulfhydryl groups (SH-groups), serum catalase activity (CTs), peroxide hemolysis (PH) and oxidative stress index (OSI) were defined.