YÖNTEMLER

TAS- TOS- OSI

Venous blood was drawn into blood tubes and serum was separated from the cells by centrifugation at 1500 g for 10 min, and theserum samples were stored at –80 °C until the analyses.

Analytical methods

TOTAL ANTIOXDANT STATUS (TAS)

TAS levels were measured using commercially available kits (Relassay, Turkey). The novel automated method is based on the bleaching of characteristic color of a more stable ABTS (2,2 ′ - Azino-bis(3-ethylbenzothiazoline-6-sulfonic acid)) radical cation by antioxidants. The assay has excellent precision values, which are lower than 3%. The results were expressed as mmol Trolox equivalent/L (Erel O. A novel automated direct measurement method for total antioxidant capacity using a new generation, more stable ABTS radicalcation. Clin Biochem 2004;37:277-85.)

TOTAL OXIDANT STATUS (TOS)

TOS levels were measured using commercially available kits (Relassay, Turkey. In the new method, oxidants present in the sample oxidized the ferrous ion-o-dianisidine complex to ferric ion. The oxidation reaction was enhanced by glycerol molecules abundantly present in the reaction medium. The ferric ion produced a colored complex with xylenol orange in an acidic medium. The color intensity, which could be measured spectrophotometrically, was related to the total amount of oxidant molecules present in the sample. The assay was calibrated with hydrogen peroxide and the results were expressed in terms of micromolar hydrogen peroxide equivalent per liter (µmol H_2O_2 equivalent/L). (Erel O. A new automated colorimetric method for measuringtotal oxidant status. Clin Biochem 2005;38:1103-11.).

OXIDATIVE STRESS INDEX (OSI)

The ratio of TOS to TAS was accepted as the oxidative stress index (OSI). For calculation, the resulting unit of TAS was converted to µmol/L, and the OSI value was calculated according to the following Formula : OSI (arbitrary unit) =

TOS (µmol H_2O_2 equivalent/L) / TAC (µmol Trolox equivalent/L). (1-3).

1. Yumru M, Savas HA, Kalenderoglu A, Bulut M, Celik H, Erel O. Oxidative imbalance in bipolar disorder subtypes: a comparative study. Prog Neuropsychopharmacol Biol Psychiatry. 2009 Aug 31;33(6):1070-4.
2. Kosecik M, Erel O, Sevinc E, Selek S. Increased oxidative stress in children exposed to passive smoking. Int J Cardiol 2005;100:61–4.
3. (Harma M, Harma M, Erel O (2003) Increased oxidative stress in patients with hydatidiform mole. Swiss Med Wkly 133:563-536).

Measurement of paraoxonase-1 activity;
Paraoxonase and arylesterase activities were measured using commercially available kits (Relassay, Turkey).
The rate of paraoxon hydrolysis (diethylpnitrophenylphosphate) was measured by monitoring the increase of absorption at 412 nm at 37 °C. The amount of generated p-nitrophenol was calculated from the molar absorption coefficient at pH 8.5, which was 18.290 M−1 cm−1 Paraoxonase activity was expressed as U/L serum.