Oxidative stress subsides by time after living related liver transplantation in pediatric age

Background: Oxidative Stress has been concerned to have influence on the recipients of living related liver transplantation (LRLTx) in terms of graft survival and prognosis in the pediatric age.

Purpose: To evaluate the oxidative status of pediatric LRLTx recipients during their regular outpatient follow-up, with special concerns the influence of post-LTx duration.

Patients and Methods: The study included 43 patients (20 males and 23 females), between the age of (1.6 years and 25.1 years; mean 12.3 years), who underwent LRLTx since periods of (5 months to 17.5 years; Mean 7.3 years) at their ages of (1.2 year to 14.4 years; mean 5 years).

Methods: Serum GPT, GOT, γ-GTP, ALP and LDH were measured as part of their regular follow-up.

Serum total hydroperoxide (TH), biological antioxidative potential (BAP) were measured using the free radical analytic system (FRAS) which needs 20μL of serum and takes 10 minutes for each sample. Oxidative Stress Index (OSI), the ratio TH/BAP, was calculated.

Results: Serum OSI, TH, LDH, ALP and GOT correlated negatively with the post operative duration. BAP correlated positively with the post operative duration. TH correlated positively with serum GOT and γ-GTP, but negatively with serum BAP. OSI correlated positively with serum levels of GOT, GPT, LDH, ALP and γ-GTP.

Conclusion:
1. OSI a simple outpatient procedure gives an index of the laboratory results and oxidative status of patients who underwent LRLTx and can be useful for their follow up.
2. LRLTx patients are exposed to oxidative stress early in their post operative duration which subsides by time.