

## Summary

Pregnancy in insulin-dependent diabetes mellitus (IDDM) is associated with a greater incidence of fetal morbidity. Recent studies suggest that increased maternal free radical production and antioxidant depletion may contribute to this risk. The aim of the present study was to assess antioxidant status and lipid peroxidation, as a measure of free radical activity, in diabetic mothers in comparison with a control group, and to correlate these measures to fetal outcome. The study comprised 28 pregnant diabetic females at time of delivery and their offspring. Another 15 non-diabetic healthy pregnant females and their offspring served as control group. Maternal and cord blood samples were taken at time of delivery to determine the level of malondialdehyde (MDA) as specific biomarker of lipid peroxidation. Antioxidant status was assessed by measuring the enzyme superoxide dismutase (SOD) activity, as well as plasma concentrations of retinol,  $\alpha$ -tocopherol,  $\beta$ -carotene, zinc and copper. Fetal apgar score and birth weight were also recorded. Blood glucose level was also determined to assess metabolic control of diabetes mellitus. The level of lipid peroxidation (MDA) in plasma samples obtained from infants of diabetic mothers and their mothers were significantly higher than those from control groups. All antioxidant enzymes (SOD), vitamins (A & E) and related trace metals (copper & zinc) were significantly lowered in both diabetic mothers and their newborns in comparison to control groups.