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Lipid peroxidation and antioxidant protection in patients with diabetes mellitus type 1 during reproductive system development

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Abstract

The aim of present research was the analysis of lipid peroxidation and status of the antioxidant defense in healthy and with type 1 diabetes mellitus girls considering different age periods of reproductive system formation. Spectrophotometric and fluorometric methods were used. Both the group of healthy and with type 1 diabetes people were formed on four age groups. All the groups of the patients with type 1 diabetes were collated with duration of a disease. It was shown the increase of double bonds and diene conjugates (DC) and the decrease of levels of α-tocoferol and retinol in girls with the I type diabetes at age of 14-15 years old in comparison with the parameters in group of the patients of 8-13 years. We marked increase of malondialdehyde (MD) concentration and elevated level of retinol in healthy girls at age of 14-15 years old. At age of 16-18 years there was registered high levels of ketodienes (KD) and coupled trienes (CT), MD with lack of changes in antioxidant protection in patients with the I type diabetes. The increase of KD and CT and low values of MD also the increase of level of retinol were observed in healthy girls at age of 16-18 years in comparison with the parameters in group of the patients of 14-15 years. During the period of reproductive maturity we marked low of variation range of DC, KD and CT, MD and oxided glutathione with increase of retinol in comparison with the parameters in group of the patients of 16-18 years. It was shown the decrease of KD and CT in the healthy group during that period.

The fixed effect of parameters LP increase with the decrease of adaptation's possibilities of the antioxidant defense in age groups with type 1 diabetes indicate the presence of involvement of cells in destructive processes of the free radical etiology.

Biography

Lubov Kolesnikova completed her PhD in 1994 and became Corresponding member of Russian Academy of Medical Sciences in 2000 year. Since 1999 until present she is a director of Scientific centre of family health and human reproduction problems of Siberian brunch of RAMS (Irkutsk, Russian Federation). She has published more than 400 papers and serving as an editorial board member of some journals.