

The Levels of Progesterone and Estradiol in the Blood Serum of Males Suffered from Diabetes Mellitus Type I and Type II, During the Disturbance of Reproductive Function

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Abstract

The levels of progesterone and estradiol were defined in 42 patients, 18 of them were insulin-dependent (type I), 24 non-dependent (type II) patients. The results of our study has shown that: in the males suffered from either type I or type II diabetes mellitus with disturbance of reproductive function, the level of serum progesterone is elevated mostly in case of type II diabetes mellitus (78,3%), mainly in the patients more than 40 years old. There is correlation between the level of the progesterone and the duration of the disease (Type I - 10 years after the onset of the symptoms; Type II - 5 years after the onset of the symptoms). The elevation of estradiol level in the serum was revealed in the patients of both type of disease, but especially in case of type II diabetes mellitus. There is correlation between the elevation of the level of estradiol in the serum and the duration of the disease.

Keywords: *diabetes mellitus, reproductive function, progesterone, estradiol*

Introduction

Among the complications of diabetes mellitus the most significant one is the disturbance of reproductive function. There are enough studies concerning etiologic and pathogenetic factors of this problem, mostly they are presented by determining the levels of one or several sex hormones to define their regulative function in the above mentioned disturbance [3, 4, 7, 5 e.t.c.]. It's important that, among these dates the less studied question is the level of progesterone and estradiol during the disturbance of reproductive function developed on the base of diabetes mellitus [1, 3, 6]. It is also important, that most of these studies

report the hormone levels of the females suffered from diabetes mellitus.

The aim of our study was to determine serum progesterone and estradiol levels in the males with diabetes mellitus.

Materials and Methods

To determine serum progesterone and estradiol levels in the case of reproductive function disturbance developed on the base of insulin-dependent (type I) or non-dependent (type II) diabetes mellitus.

The studying of hormones was conducted by radio-immunological method, using DSL test-collection. The levels of progesterone and estradiol were defined in 42 patients, 18 of them were insulin-dependent (type I), 24 non-dependent (type II) patients.

Results

The results of studying I group (type I) revealed that in the most cases (66 %) serum progesterone level above 40 years old patients was high, only in some cases the concentration of this hormone decreased (*Tab.1*).

The level of above mentioned hormone was significantly higher when the duration of the disease was more than 10 years (*Tab.2*). II group (type II diabetes group) consisted of 24 patients. The results concerning the age of the patient are in the *Tab.3*.

The results of studying group II revealed, that during diabetes mellitus type II serum progesterone level increases more, in 78,3 % of the cases. The elevation of the progesterone level was mentioned in the persons above 30 years old (15 patients of the 17).

Taking under consideration the time passed from the onset of symptoms we can say that, elevated concentrations of progesterone has been mentioned since the first symptoms of the diabetes mellitus (*Tab.4*). In the same group (42 patient) the level of serum estradiol has been studied.

I group (type I diabetes mellitus group) consisted of 18 patients. The age of distribution and the results are in the *Tab.5*.

The studying results revealed, that in the I group, with reproductive function disturbance 55,5 % of the patients had the elevation of estradiol concentration, mostly in the patients more than 40 years old. Only in 2 cases there was the decrease of estradiol level, in 1/3 of the cases the hormone level was unchanged.

The level of estradiol was higher when the duration of the diabetes was more then 10 years.

II group consisted of 24 males suffered from diabetes mellitus type II (*Tab.6*) revealed serum estradiol elevation in 66,6 % (16) of the patients, with 30 years old of the age (87,6 %, 14 patients of the 16). In 2 cases the hormone concentration was decreased and in the case of 6 patient not changed.

The elevation of estradiol was significant 5 years after onset of the diabetes mellitus (68,7 %).

Conclusion

As a result we can say, that in the males suffered from either type I or type II diabetes mellitus with disturbance of reproductive function, the level of serum progesterone is elevated mostly in case of type II diabetes mellitus (78,3 %).

There is correlation between progesterone concentration and patient age, elevation of the progesterone level in the patients more than 40 years old, also we revealed the correlation between the level of the progesterone and the duration of the disease. During more than 10 years anamnesis of the type I diabetes mellitus the level of hormone is elevated, 5 years passed from the symptoms onset of diabetes mellitus type II is enough for the induction of hormone elevation.

Determining estradiol level in the serum of males suffered from diabetes mellitus was revealed the elevation of this hormone during type II in 66,6 % and type I in 55,5 % of the cases.

In the most cases of diabetes type I the estradiol level was elevated when the duration of the disease was more than 10 years and in the case of diabetes type II the hormone concentration increased after 5 years of the disease onset.

Our study has shown that significant changes of progesterone and estradiol levels that correlates with the different forms of the diabetes mellitus and the duration of the disease.

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Содержание прогестерона и эстрадиола в крови у больных сахарным диабетом при нарушении репродуктивной функции

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Р Е З Ю М Е

Исследована концентрация прогестерона (П) и эстрадиола (Э) у 42-х мужчин, больных сахарным диабетом I и II типов в возрасте 18-52 лет с нарушением половой функции. Проведенные исследования показали повышение содержания П у этого контингента больных, особенно выраженное при II типе сахарного диабета (78,3 % - случаев). Отмечалась определенная корреляция с продолжительностью заболевания и повышением уровня П. Содержание Э также оказалось повышенным у большинства обследованных. Повышение уровня Э положительно коррелировала с возрастом больных и продолжительностью заболевания.

Ключевые слова: *сахарный диабет, репродуктивная функция, прогестерон, эстрадиол*