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This paper presents the first mathematical modeling of an oral glucose tolerance test with a double load, used for qualitative diagnosis of latent Diabetes mellitus type 2. Based on the clinical and physiological data of the carbohydrate exchange regulation system, its structural-functional minimal model in the form of the first-order differential equation with delayed argument relative to the glycemic level, that adequately reproduces the data of this test, is constructed.

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(2) [2].

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[3].

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$g'(t)$

$i'(t)$:

$$g'(t)_{ин\ заб} = -\lambda i'(t), \tag{1}$$

$i'(t)$

:

$f(t)$,

$Q(t)$

$f(t)$

$$y(t) = g(t) - g_b$$

$g(t)$

g_b

:

$$i'(t)_{секр} = \eta f(t) + \mu Q(t) + \chi y(t - \tau). \tag{3}$$

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(1) (2),

$$\begin{aligned} \frac{dy}{dt} &= (1 - \alpha)f(t) - \beta y(t - 1) - \gamma y(t - \tau) - \zeta Q(t), & t \geq 0, \\ y(t) &= \phi(t), & -\tau \leq t \leq 0, \end{aligned} \tag{4}$$

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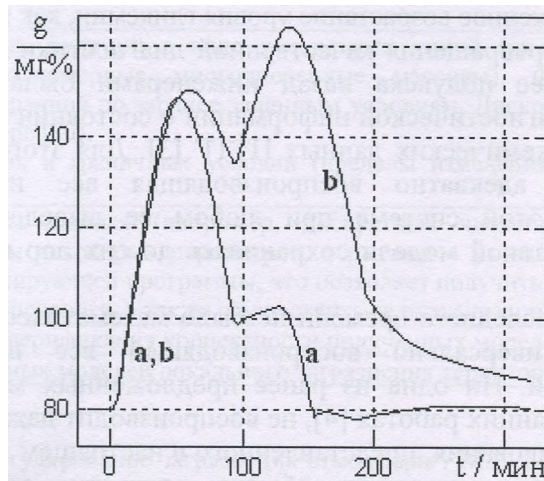
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[5].

(4)

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2 (.1).



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2: - , b -

2.

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1. : , 2010. — 437 .
2. - , 2016.-736 .
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