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Circadian rhythms of physiological functions of the pregnant woman and the fetus and the biological solemnity thereof

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The present study is the result of a long-way reflection and search resulted in a non-ordinary approach to the analysis of fetal FHR. Is the property found in the fetal organism intrinsic or the rhythmic organization of biological systems is determined by periodic changes in the external environment? Place and the role of the rhythmic organization? Hence, a digital analysis of fetal and maternal heart rate was performed for 24 hours, uninterruptedly

Preliminary analysis: During the period of pregnancy the mother retains a clearly expressed daily rhythm of cardiac activity. Depending on the predomination of this or that type of cardiogram in fetal ECG, “quiet (sleep-like condition)” hours (4am-9am and 2pm – 19pm) and “active” hours (9am – 2pm and 7pm-4am) were singled out. Both, in the mother and the fetus, alternation of increase and decrease periods in the physiological functions can be observed: “active”

hours of the fetus coincide with maternal “quiet” hours, while fetal “quiet” hours fall on “active” hours of the mother. Fetal movements can be observed at 10pm-4am. High fetal activity (10pm – 4am) does not affect the night sleep of the mother. In fetal “quiet” hours (4am -9am) the motor activity decreases 6-7 times. The maximal number of FHR indices below 120 bpm were revealed in fetal “quiet” hours

Conclusion: We revealed 24- hour rhythms of the fetus. Functioning of fetal physiologic systems coincides with that of maternal organism, being, however, in a reverse phase. Presumably, the fetus needs to maintain a relatively constant homeostasis: fetal activation during the “quiet” maternal hours and deceleration of fetal physiologic intensity (sleep-like condition) when the mother’s physiologic activity is increased.

Biography

Medea Zarnadze completed her PhD in 1985 from P.M. Buiko Scientific-Research Institute of Pediatrics, Obstetrics and Gynecology, Kiev. At present she works at K.V. Chachava Institute of Perinatology, Obstetrics and Gynecology, 38 Kosnava St. Tbilisi 0108, Republic of Georgia and Diagnostic department of JSC Academician O. Cudushauri national medical Department of Obstetrics & Gynecology. She is engaged in a massive investigation of fetal and maternal biorhythms. She has published 12 articles in reputed journals. She has participated in numerous Scientific Conferences and Congresses (8) devoted to these problems.

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