

ANGIOGENESIS MARKERS AND THEIR ROLE IN PREDICTION OF PREECLAMPSY IN MULTIPLE PREGNANCY

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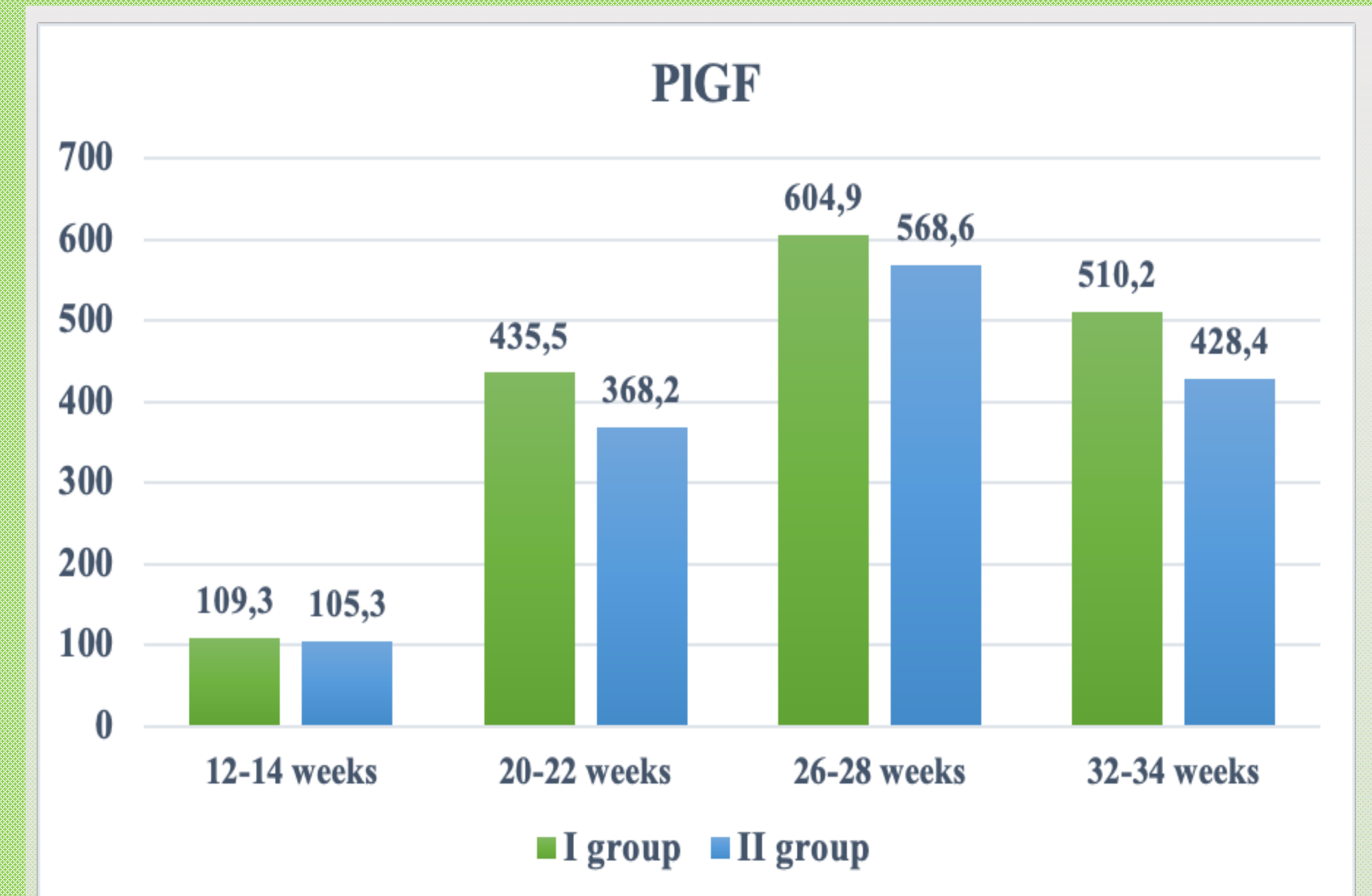
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Objective. To identify changes in biochemical markers of endothelial dysfunction to detect pre-clinical manifestations of preeclampsia in pregnant with multiple pregnancies after the use of assisted reproductive technologies (ART).

Design. Prospective study of dichorionic diamniotic twin pregnancies after ART. I group - the developed algorithm of preventive measures was used (acetylsalicylic acid 150 mg orally from 12 weeks of pregnancy until its completion; progesterone 200 mg per vaginum from the first day of pregnancy to the 16th week; complex of vitamins and microelements during pregnancy and in the postpartum period), II group - the generally accepted prevention algorithm.

Methods. 62 pregnant women with dichorionic diamniotic twins after ART: I group 35 women, II group 27. PlGF is determined at 12-14, 20-22, 26-28, 32-34 weeks and the sFlt-1/PlGF ratio at 26-28, 32-34 weeks.

Results. In the both groups PlGF increase up to 28 weeks (I group 604.9 (83.4 – 814.5) pg/ml vs 568.6 (68.1 – 765.3) pg/ml. In the I group in 26 - 28 weeks, PlGF was <100 pg/ml in 4 (11.4%) women, and in the II group in 6 (22.2%) without clinical manifestations of preeclampsia. In weeks 32-34, PlGF was <100 pg/ml in 6 (17.1%) women of the I group vs 7 (25.9%) of the II group. The sFlt-1/PlGF ratio at 26-28 weeks of I and II groups: 22.4 (4.8-37.2) vs 28.7 (6.6 – 40.8); 32-34 weeks 33.1 (22.9 – 66.3) vs 36.8 (23.6 - 130.1). At 32-34 weeks, the ratio of sFlt-1/PlGF >38 in 5 (14.3%) women of the I group vs 7 (25.9%) of the II group. I group - 2 cases of moderate preeclampsia at 32 and 33 weeks (PlGF - 63.2 pg/ml, sFlt-1/PlGF ratio - 51.7 and PlGF – 58.7 pg/ml, sFlt-1/PlGF ratio – 66.3). In the II group - 4 cases of preeclampsia. Two of moderate preeclampsia, at 30 weeks with PlGF - 74.1 and 69.3 pg/ml, sFlt-1/PlGF ratio - 98.6 and 104.5. One at 32 weeks: PlGF - 44.1 pg/ml, ratio sFlt-1/PlGF 122.4 and after 6 days - severe preeclampsia. Second - gestational hypertension from 29 weeks, at 34 weeks - severe preeclampsia (PlGF 47.3 pg/ml, sFlt-1/PlGF ratio 130.1). In some cases when the PlGF was <100 pg/ml and the sFlt-1/PlGF ratio was >38 had signs of endothelial dysfunction (fetal growth retardation syndrome, distress of fetuses, premature birth).



Conclusion. PlGF, sFlt-1 and their ratio are promising markers in the prediction and early diagnosis of preeclampsia in multiple pregnancies after assisted reproductive technologies. Based on the growth dynamics of the sFlt-1/PlGF ratio, it is possible to predict the early development of preeclampsia even without clinical symptoms, and to make a decision about the possibility of extending the pregnancy or the need for urgent delivery.