

IASO Title: Clinical evaluation of fms-Like Tyrosine Kinase-1 (sFlt1) to Placental Growth Factor (PLGF) biomarkers in a cohort of 20 to 34 week pregnant women in Greece: a pilot study

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Background: Angiogenic factors such as placental growth factor (PIGF) and soluble fms-like tyrosine kinase-1 (sFlt-1) have been shown to play a major role in angiogenesis and vascularogenesis during pregnancy (1, 2) and in early diagnosis of pre-eclampsia, a clinical feature leading to serious adverse obstetric outcomes (3).

Subject and method: In the current study 34 women at 20- to 34 week of pregnancy have been enrolled. High risk patients were selected according to two of the study criteria (Table 1). Most of the patients underwent the first trimester screening in the premises of IASO.

Results

We performed a preliminary study to evaluate the sFlt1/PLGF ratio as a preeclampsia marker in high- and low-risk women by the ROCHE automated immunogenic method. The sFlt1/PLGF ratio ranged from 1,6 to 115. PLGF and sFlt1 ranged 60.0-1532 pg/ml and 64.23-20465 pg/ml respectively. All sFlt1 and PLGF measures have been within the analytical sensitivity range of the method. Out of 34 patients 15 were considered as high-risk and 19 as low-risk. Out of 15 high-risk pregnant women 6 have shown moderate to high sFlt1/PLGF ratios. In low- as well in high-risk women a ratio lower than 35 was associated with normal pregnancy outcomes and this was observed for all of the cases studied (Table 1).

Medium to highly elevated serum sFlt1/PLGF ratio from 22 week as well as low PLGF concentration was associated with early onset pre-eclampsia from the second trimester of gestation.

Discussion. Our results are in agreement to recently published research (2, 4, 5, 6). This preliminary ongoing study was proven to be helpful for obstetricians to decide on the appropriate management, follow-up of high-risk patients and gave promising results in pre-eclampsia prediction. However, more work is necessary in stratified pregnant women population to better evaluate the changes of sFlt1 /PLGF ratio in different high- and low-risk groups in early and late onset pre-eclampsia.

Table 1. Clinical characteristics of pre-eclampsia six high risk pregnant women

Patient	Age	Test Week	Delivery week	sFlt1	PLGF	Ratio sFlt1/PLGF	proteinuria	Diabetes type I	1 st preg	twin	BP syst/diast
1	45	29	33	12081	324.9	37.2	Y	Yes	Y	Y	90/14
1.a	45	31	33	16583	143.7	115.7	N	Yes	Y	Y	"
2	38*	30	34	7036	91.1	71	N	N	N	N	12/19
3	28	34	36	2871	83.12	35	N	N	Y	N	09/14
4	36	30	32	6080	60.7	100.2	N	N	Y	N	10/15
5	35	22	34	5426	174.7	33/35	Yes**	N	Y	Y	95/15
6	31	34	37	20465	206.6	99	N***	N	Y	N	70/110

Y=Yes, N=NO, proteinuria≥300 mg /24h urine or ++ stick measurement, BP=blood pressure, *10 years between pregnancies,

serum uric acid elevated, *low number of platelets, oedema, 1.a =patient 1., test sampling at 31 week of pregnancy

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