

I. trimestrální screening preeklampsie

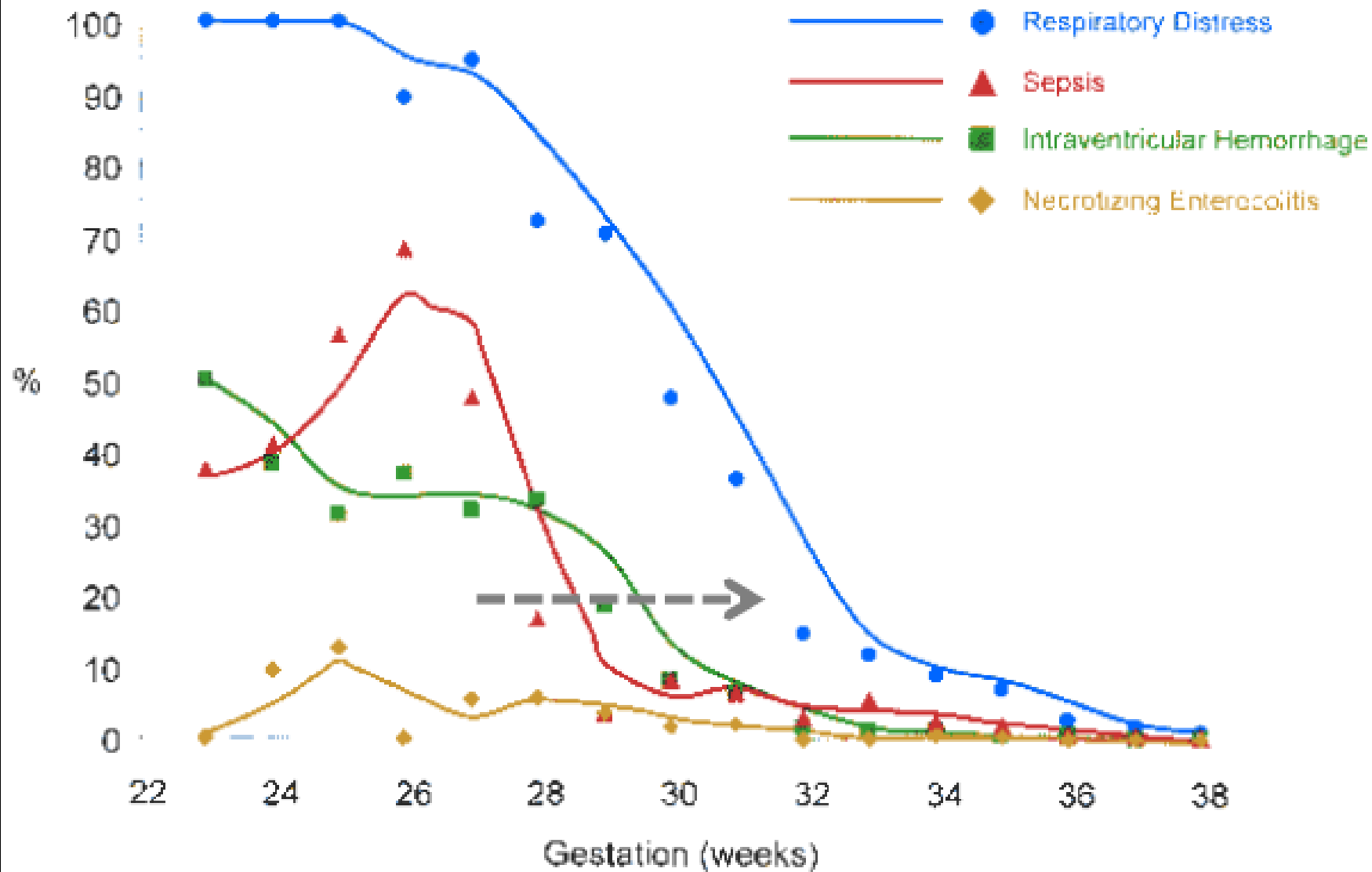
*Hympánová L., Vojtěch J., Hašík L., Haaková L.,
Krofta L., Feyereisl J.*



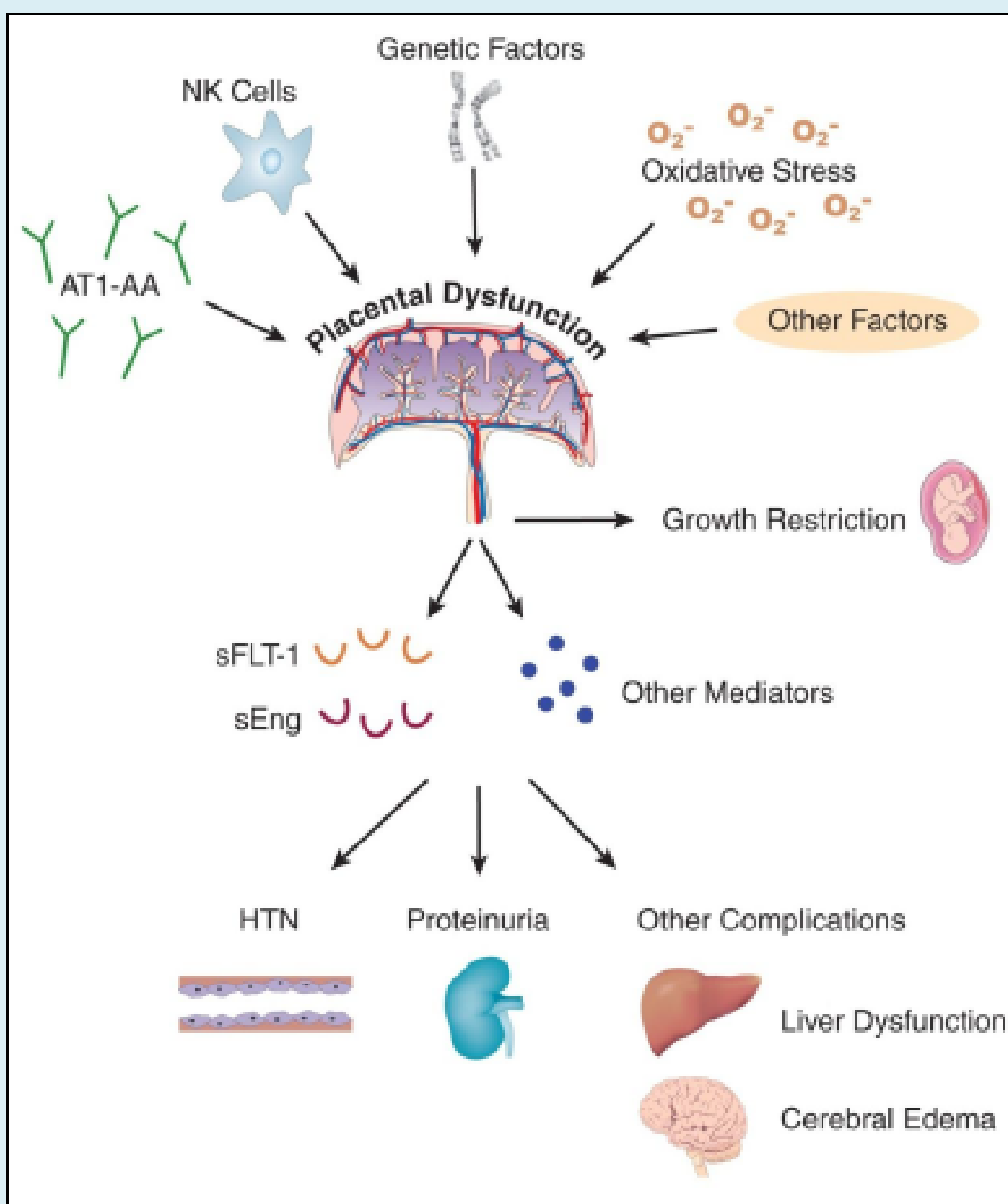
Ústav pro péči o matku a dítě, Praha – Podolí, 3. LF UK

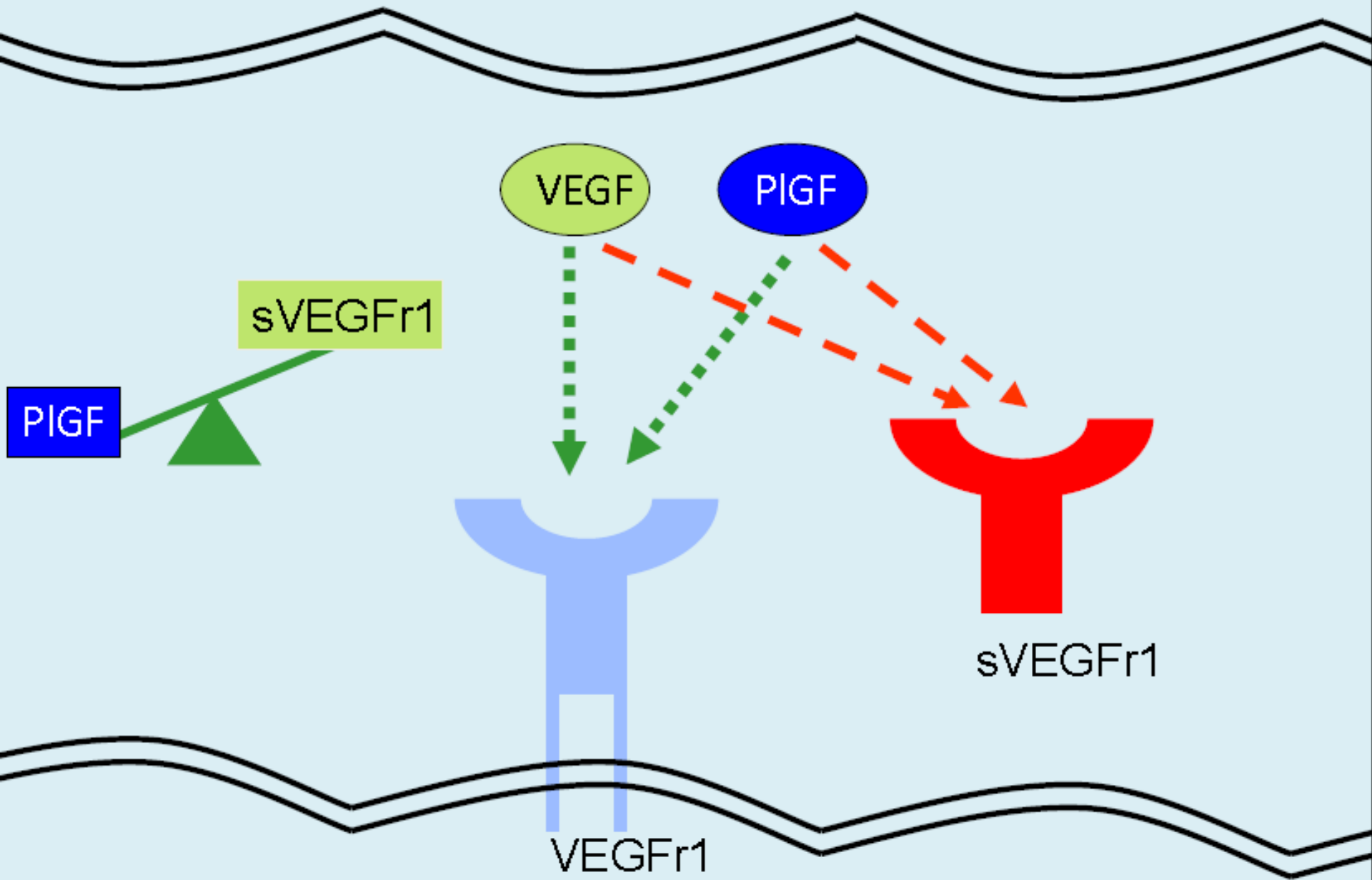
Pre-eclampsia

- závažná komplikace gravidity s výskytem 2%-14% v celosvětové populaci
- PE je definována jako současný výskyt hypertenze a významné proteinurie. Arteriální hypertenze je definována TK roven nebo vyšší než 140/90 mm Hg (alespoň dvakrát při třech po sobě jdoucích měřeních) Významná proteinurie: nad 0,3 g/l za 24 hodin po 20 g.t
- 25% se závažným průběhem

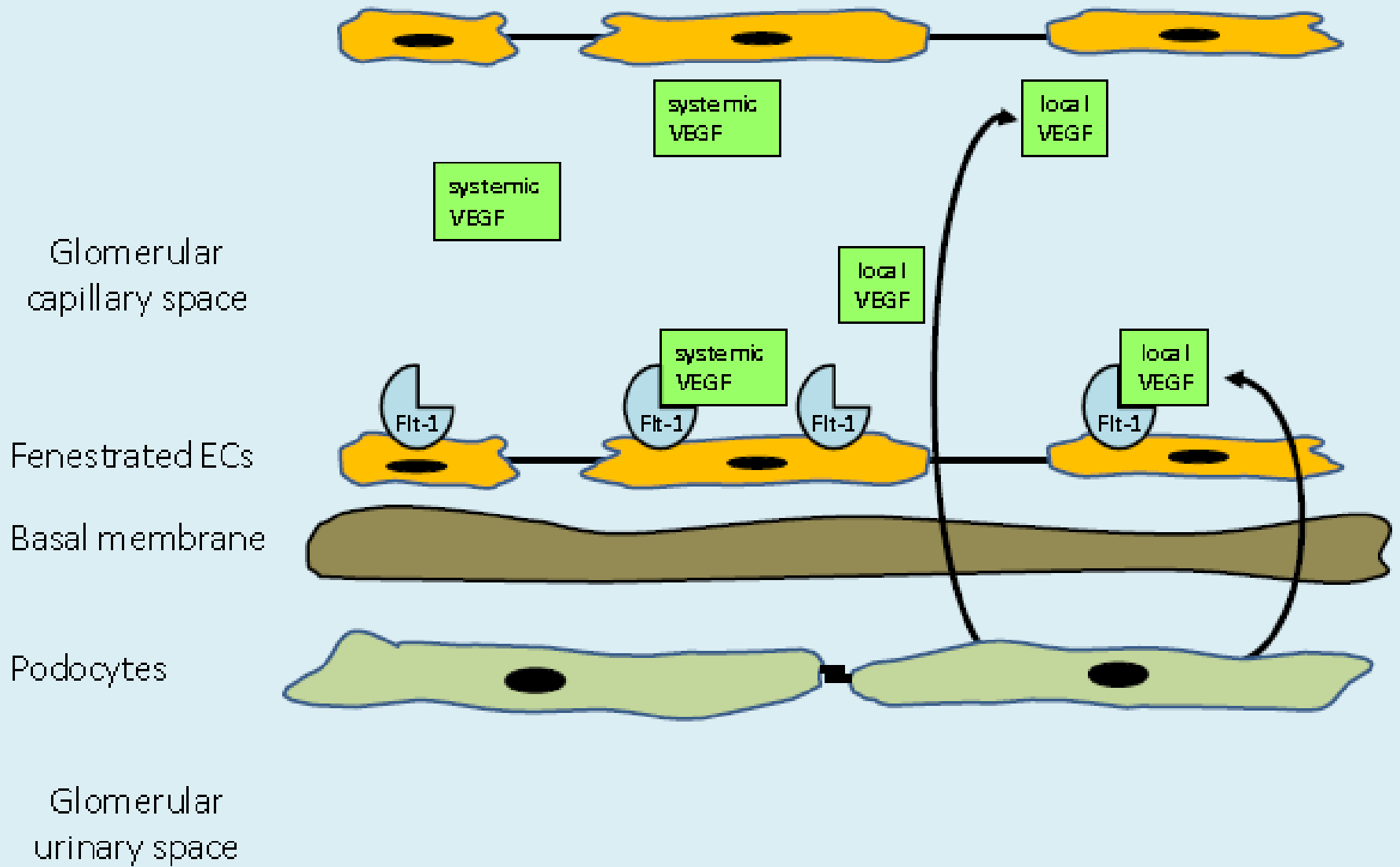


OB Bulletin

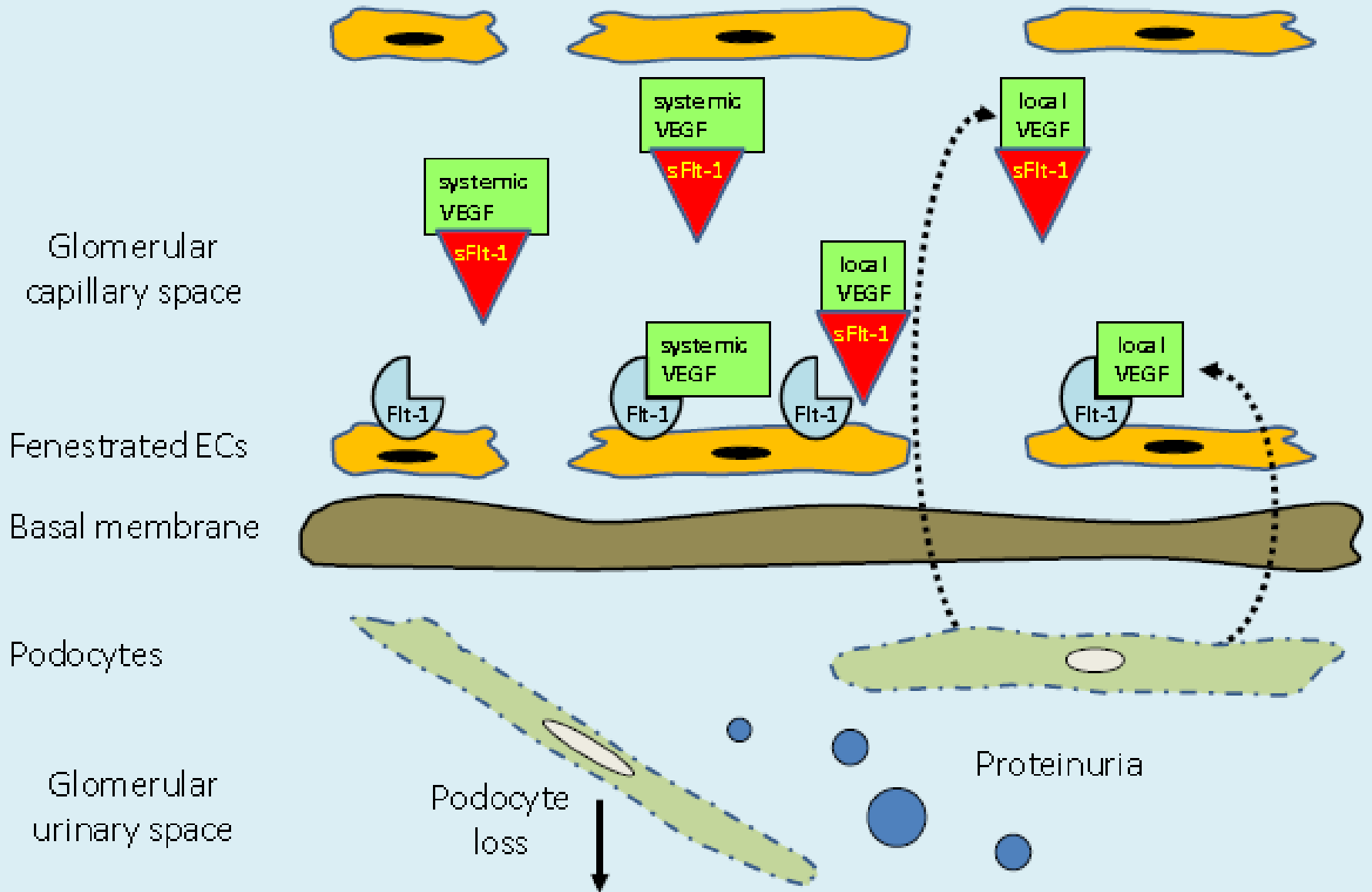




Healthy conditions



Preedampsia



Angiogenní faktory

Disbalance: \uparrow sFlt1

\downarrow VEGF, PlGF

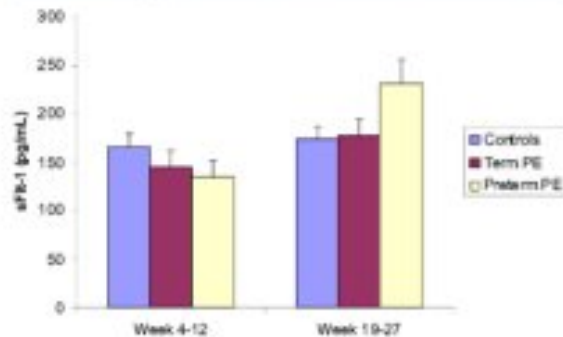
Changes in circulating level of angiogenic factors from the first to second trimester as predictors of preeclampsia.

Vatten LJ, Eskild A, Nilsen TI, Jeansson S, Jenum PA, Staff AC

Am J Obstet Gynecol. 2007 Mar;196(3):239.e1-6.

FIGURE 2

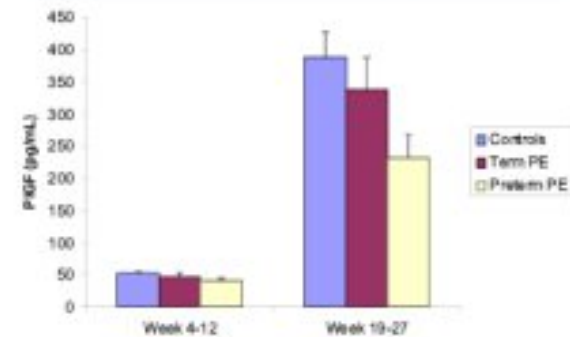
Serum concentrations of sFlt-1 in first and second trimester in women who subsequently had preterm or term preeclampsia develop, and in control women



*Geometric means, adjusted for differences in maternal age, parity, and pregnancy week of serum collection.

FIGURE 1

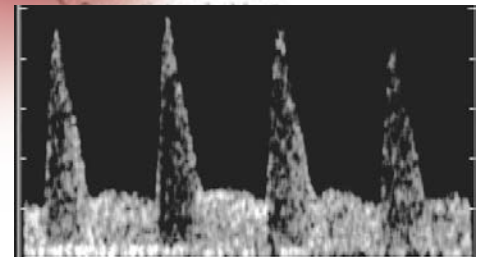
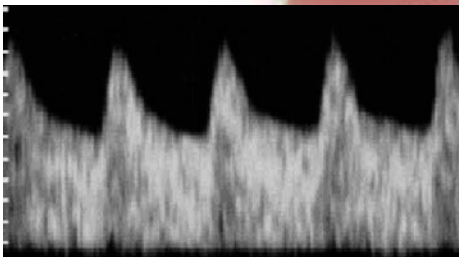
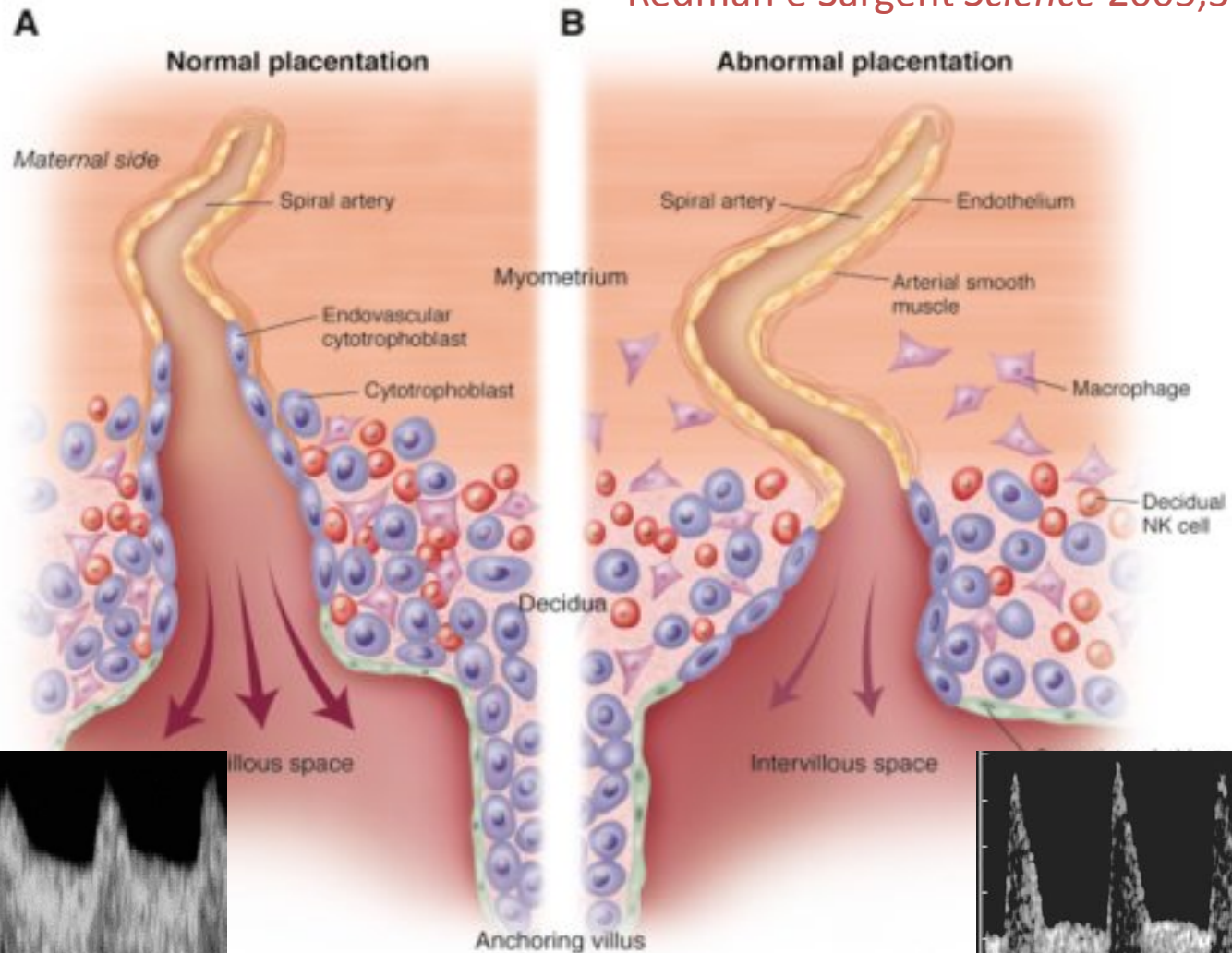
Serum concentrations of PlGF in first and second trimester in women who subsequently had preterm or term preeclampsia develop, and in control women



*Geometric means, adjusted for differences in maternal age, parity, and pregnancy week of serum collection.

Etiopatogeneze

Redman e Sargent *Science* 2005,308:1592



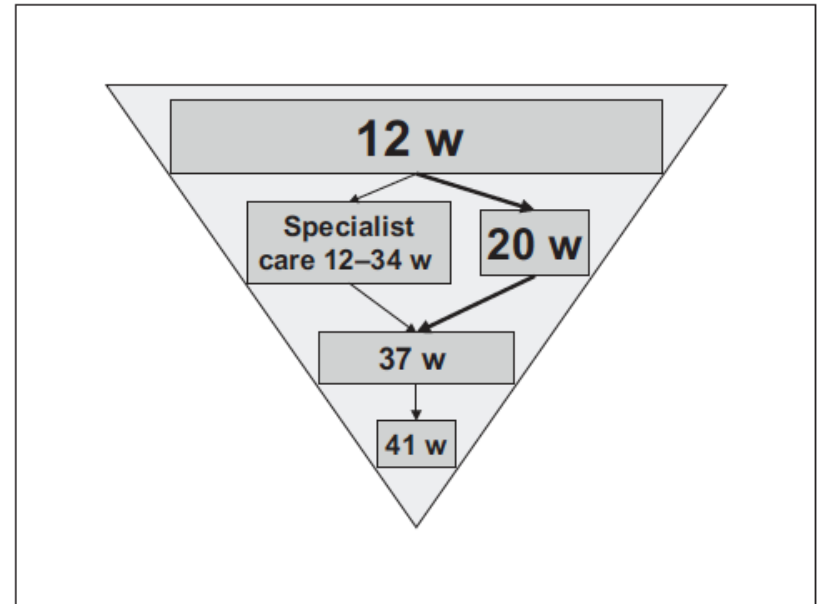
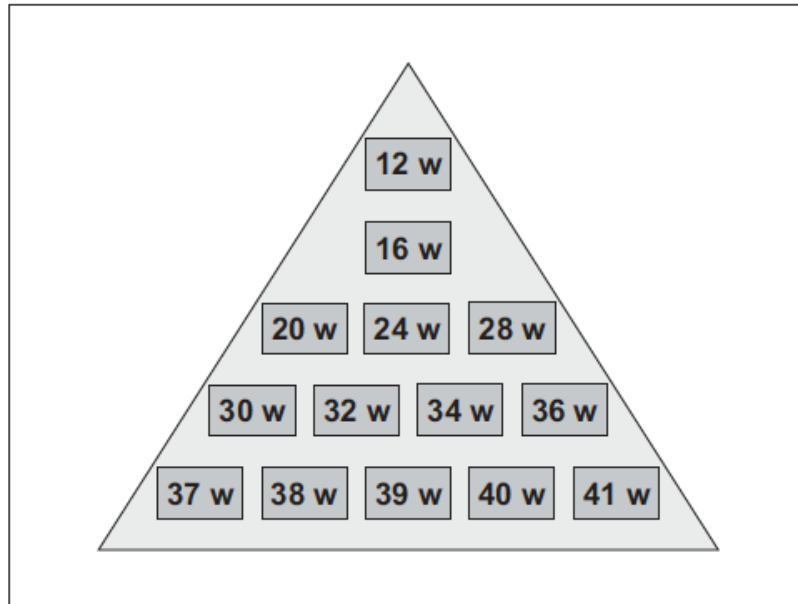
Prenatální péče



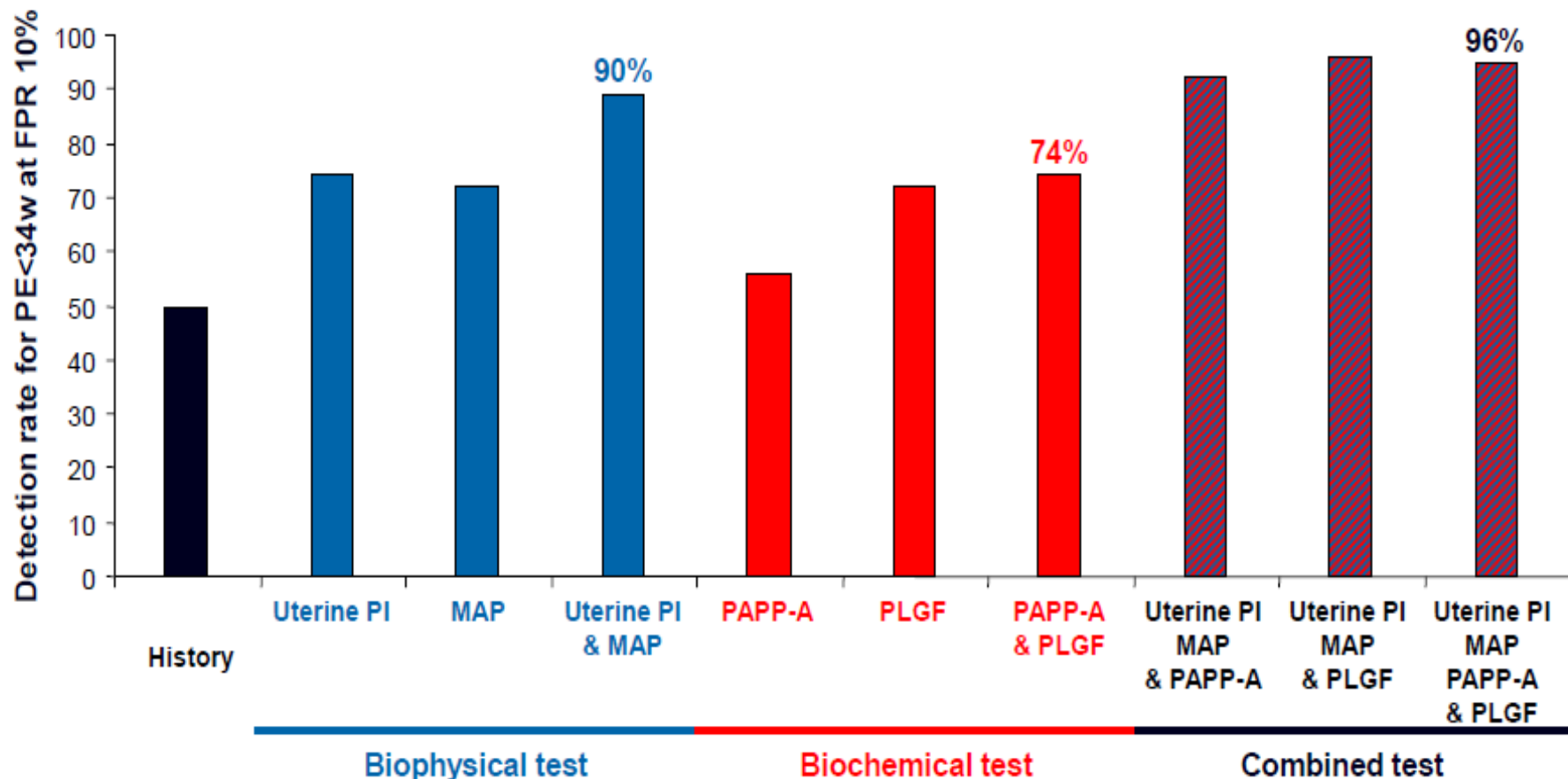
Turning the Pyramid of Prenatal Care

Kypros H. Nicolaides^{a, b}

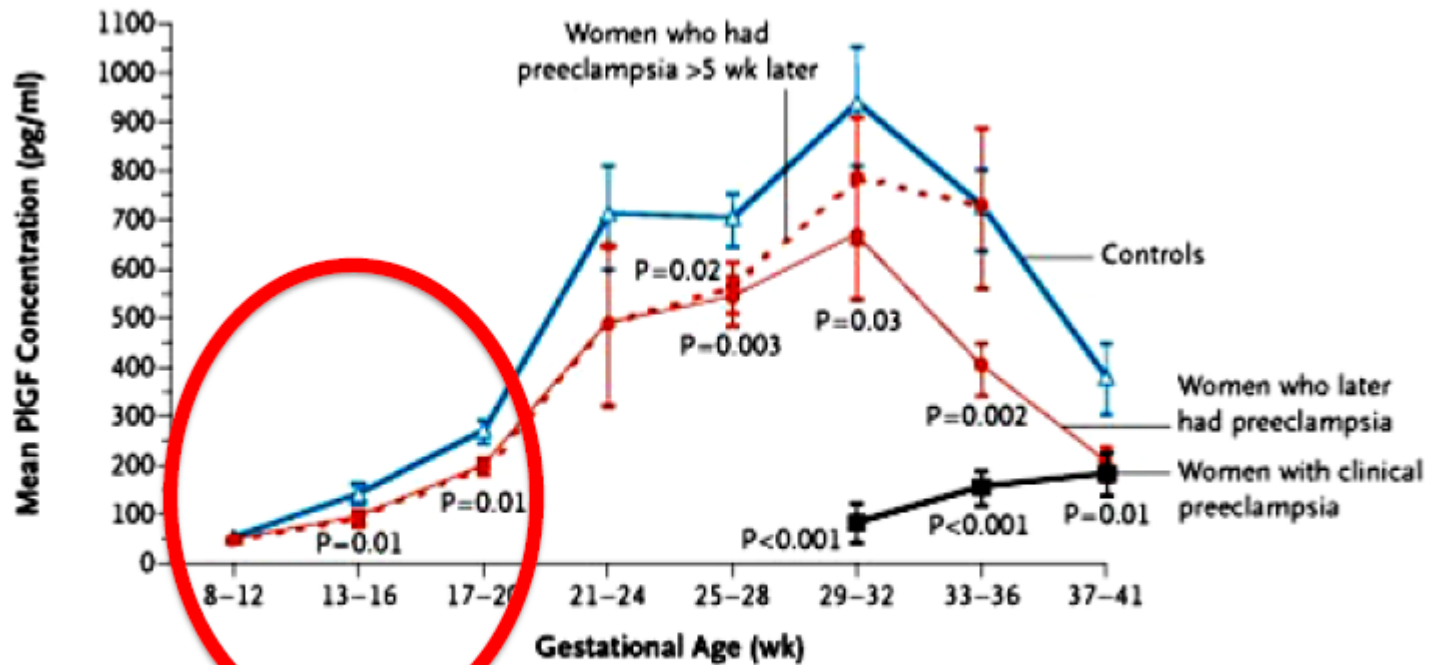
^aHarris Birthright Research Centre of Fetal Medicine, King's College Hospital, and ^bDepartment of Fetal Medicine, University College Hospital, London, UK



Maternal history and biophysical & biochemical testing



Koncentrace PlGF v průběhu gravidity



No. of specimens

Controls	20	44	56	9	72	21	70	21
Before preeclampsia	21	43	56	6	75	23	57	19
>5 wk before preeclampsia	21	43	56	6	71	19	8	—
During preeclampsia	—	—	—	—	—	2	14	26



Low-dose Aspirin from 12 wks

Meta analysis on prophylactic aspirin

31 randomized studies, 32217 patients

• Preeclampsia 0.90 (95% CI 0.84-0.97)

Askie *et al*, Lancet 2007

≤ 16 wks
(n=764)



0.47 (0.34-0.65)
21.3% vs. 9.3%

> 16 wks
(n=10,584)



0.81 (0.63-1.03)
8.1% vs. 7.3%

0 .2 .4 .6 .8 1 1.2 1.4 1.6 1.8 2.0

27 studies (11,348 women)

Bujold *et al*, 2010

Aspirin ≤16 wks: early vs late PE

Preterm PE



0.11 (0.04-0.33)

Term PE



0.98 (0.42-2.33)

0.01 0.1 1 1.0

5 studies (n=556)

Roberge *et al*, 2012

Perinatal death

≤ 16 wks
(n=923)



0.28 (0.11-0.68)
0.85% vs. 4.2%

> 16 wks
(n=9,458)



0.90 (0.71-1.14)
2.6% vs. 2.9%

0 .2 .4 .6 .8 1 1.2 1.4

Roberge *et al*, 2012

ASA v prevenci preeclampsie

Prevention of Preeclampsia and Intrauterine Growth Restriction With Aspirin Started in Early Pregnancy

A Meta-Analysis

Emanuel Bujold, MD, MSc, Stéphanie Roberge, MD, Yves Lacasse, MD, MSc, Marc Bureau, MD, François Audibert, MD, MSc, Sylvie Morone, MD, PhD, Jean-Claude Forest, MD, PhD, and Yves Giguère, MD, PhD

Aspirin started ≤ 16 weeks of gestation reduces risk of PE by 50%

Aspirin started ≤ 16 weeks of gestation reduces risk of Preterm and severe PE by 80%

The effect of aspirin was analyzed as a function of gestational age at initiation of the intervention (≤ 16 weeks

TOUR: RR 0.98, 95% CI 0.87–1.10, 10.3% treated compared with 40.5% untreated; low-dose aspirin started ≤ 16

Mechanismus účinku ASA

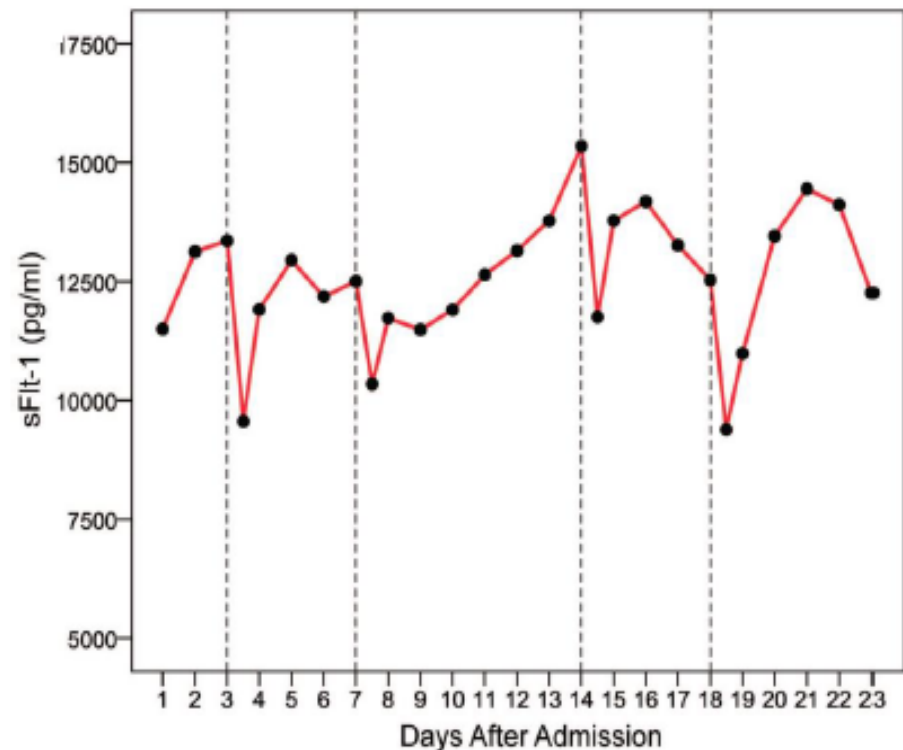
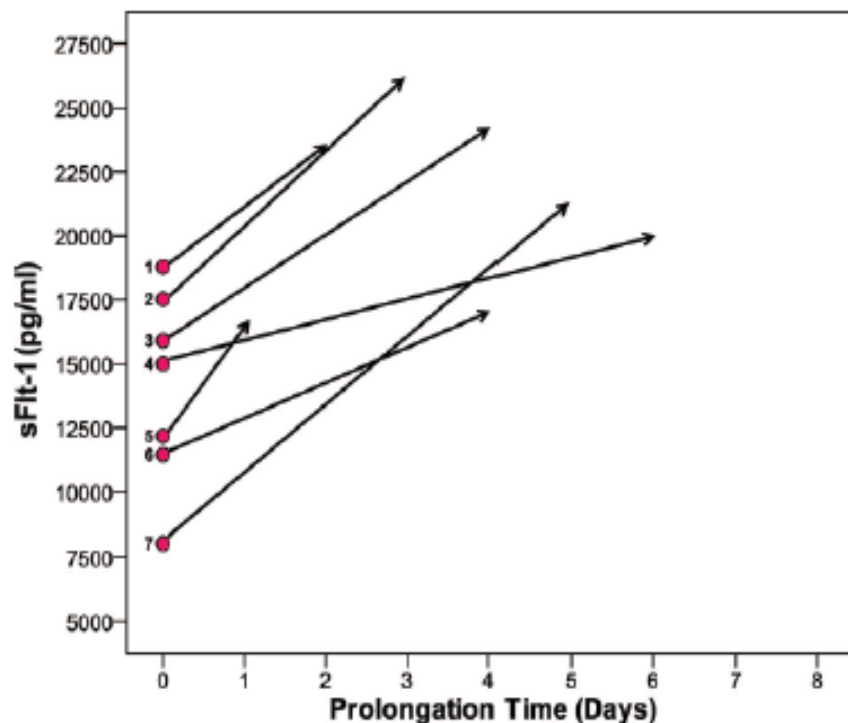
- nejasný
- ASA pravděpodobně hraje roli v remodelaci uterinních spirálních arterií, která je u pre-eclampsia abnormální

Lyall F. Priming and remodelling of human placental bed spiral arteries during pregnancy – a review. *Placenta* 2005; **26 Suppl A**: S31–S36.

Vainio M, Kujansuu E, Koivisto AM, Maenpaa J. Bilateral notching of uterine arteries at 12–14 weeks of gestation for prediction of hypertensive disorders of pregnancy. *Acta Obstet Gynecol Scand* 2005; **84**: 1062–1067

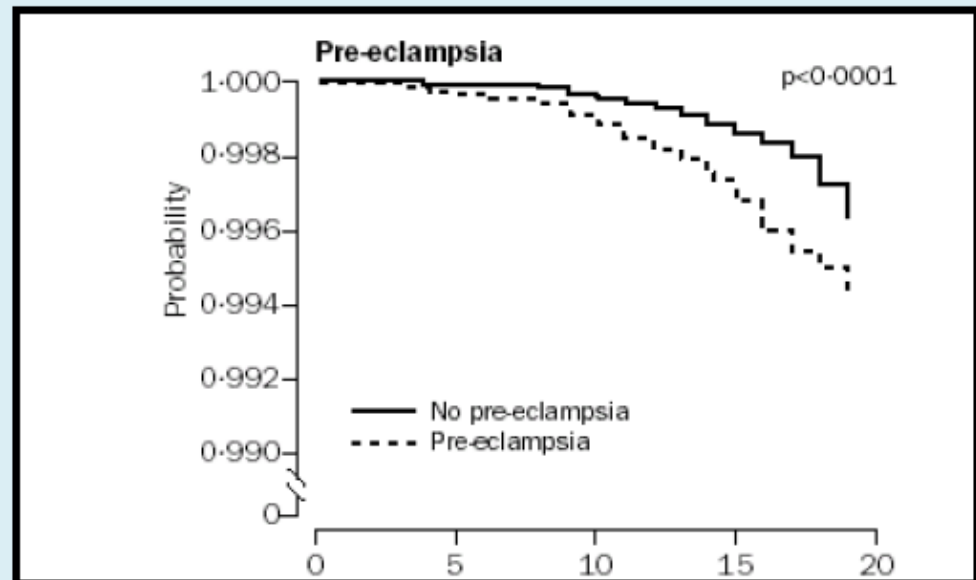
Pilot Study of Extracorporeal Removal of Soluble Fms-Like Tyrosine Kinase 1 in Preeclampsia

Ravi Thadhani, Tuelay Kisner, Henning Hagmann, Verena Bossung, Stefanie Noack, Wiebke Schaarschmidt, Alexander Jank, Angela Kribs, Oliver A. Cornely, Claudia Kreyszig, Linda Hemphill, Alan C. Rigby, Santosh Khedkar, Tom H. Lindner, Peter Mallmann, Holger Stepan, S. Ananth Karumanchi and Thomas Benzing



Pozdější rizika pro matku i plod

- Chronická hypertenze a komplikace s tím spojené
- (ICHS, AIM, CMP, CHRI,...)



Kaplan-Meier plots of cumulative probability of survival without admission for IHD or death from IHD after first pregnancy in relation to birthweight quintile, preterm delivery, and diagnosis of pre-eclampsia during pregnancy

Kaplan-Meier plot of cumulative probability of survival without admission to hospital for ischemic heart disease or death from ischemic heart disease comparing 19 years of follow-up in women with and without a history of pre-eclampsia. Smith et al, Lancet 2001; 357: 2002-2006.

Cíl studie:

- Zhodnocení efektivity screeningu na našem souboru pacientek.

Design studie:

- monocentrická, prospectivní, observační studie
- Součástí větší longitudinální studie

Methodika: screening

- Anamnesa – hlavní rizikové faktory
 - RA: CV disease(IM, CMP,..), PE, ..
 - OA: diabetes mellitus, chronická hypertenze, autoimmunity (AFS,SLE), renální on., HIV pos., věk (>40)
 - Porodnická ANA: PE, nulliparita, gemini

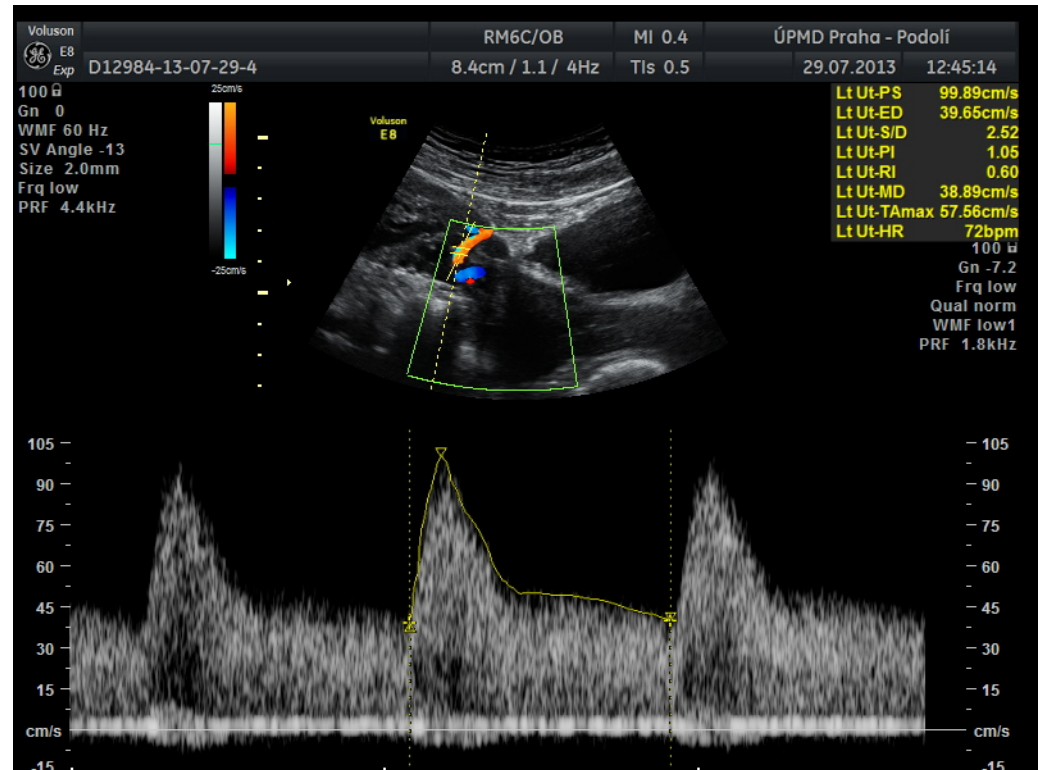
Screening

- Anamnesa
- **Střední arteriální tlak (MAP)**
 - Automatické měření



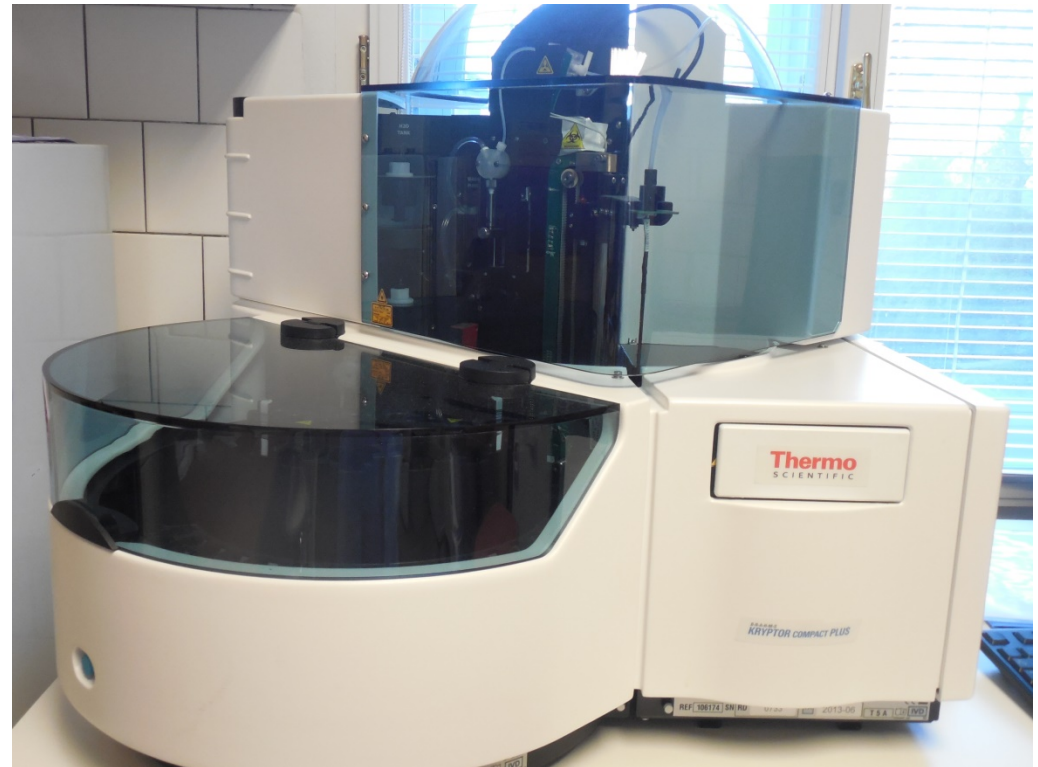
Screening

- Anamnesa
- MAP
- Uterine artery pulsatility index



Screening

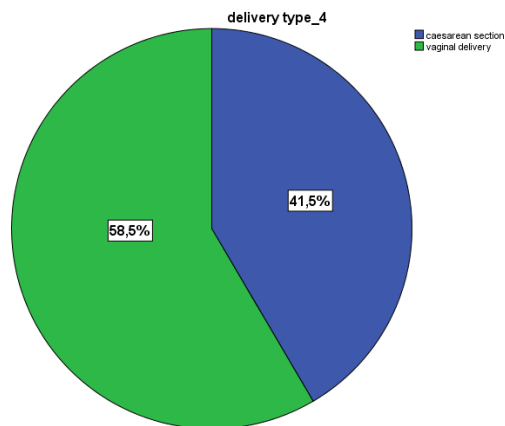
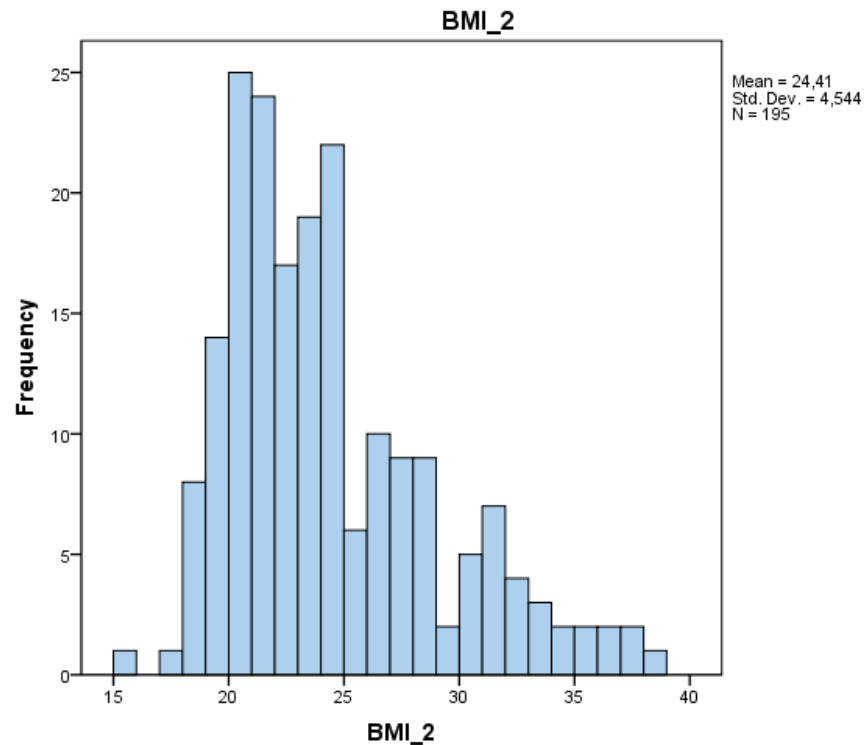
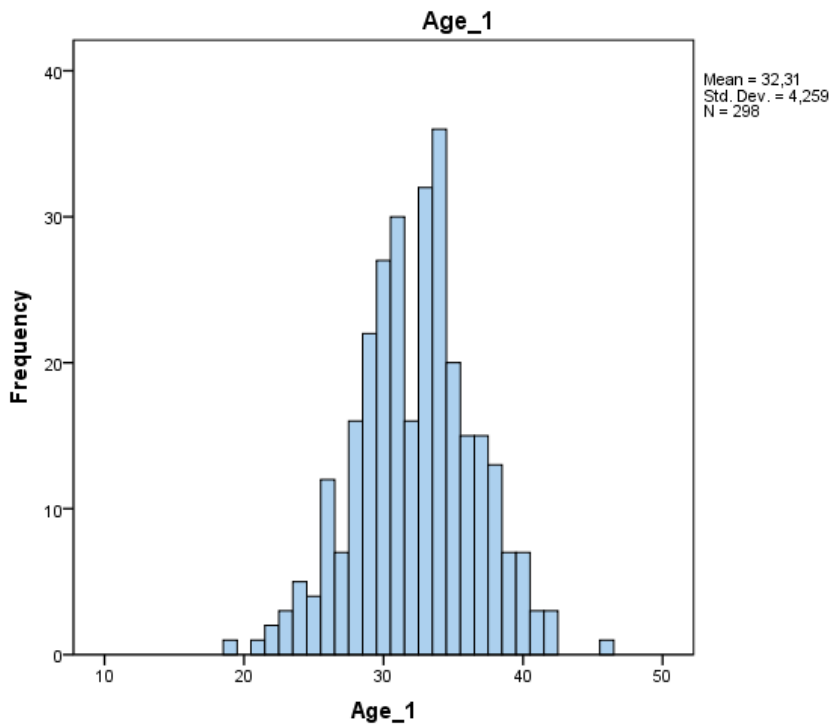
- Anamnesa
- MAP
- Uterine artery PI
- PIGF, PAPP-A



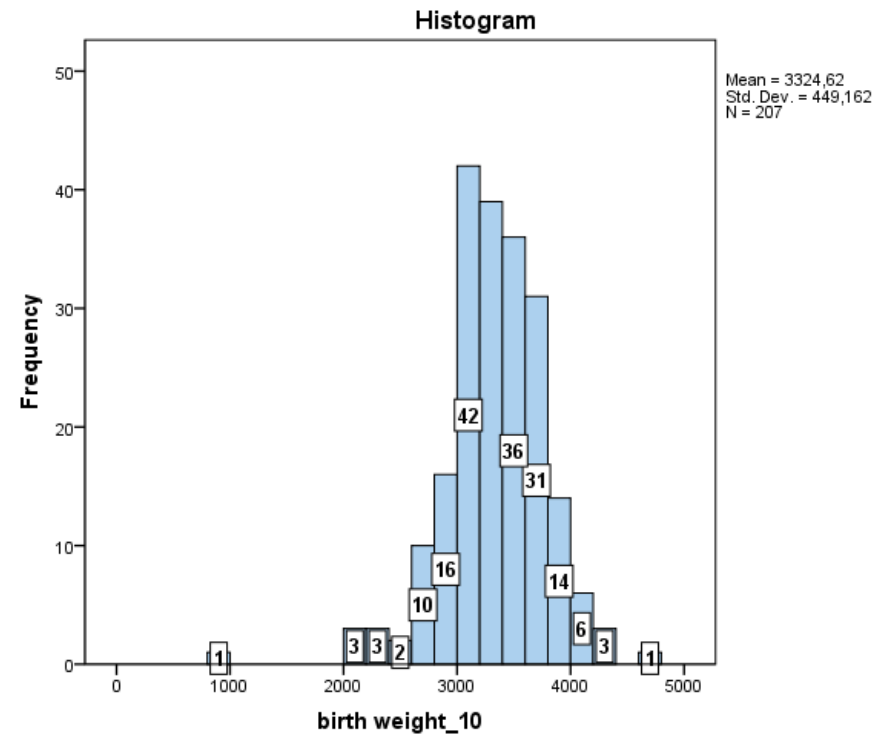
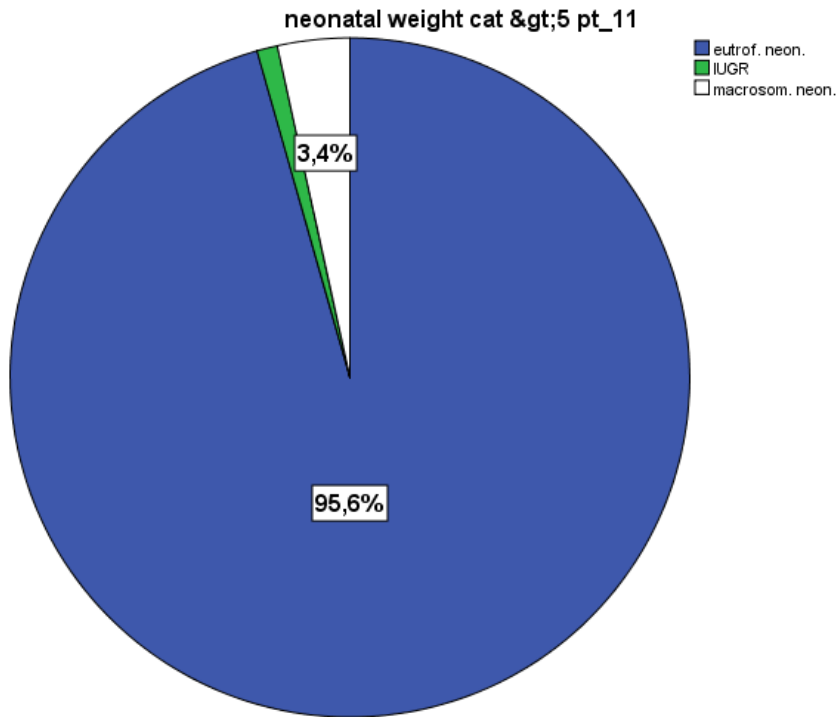
Výsledky

- 436 screeningových testů bylo provedeno
 - 39 bylo pozitivních
- 197 jsou k dispozici kompletní data po porodu
 - 19 bylo pozitivních
- Pozitivní screening 9-10%
- Doporučení: užívání 100mg ASA denně do 36 gestačního týdne

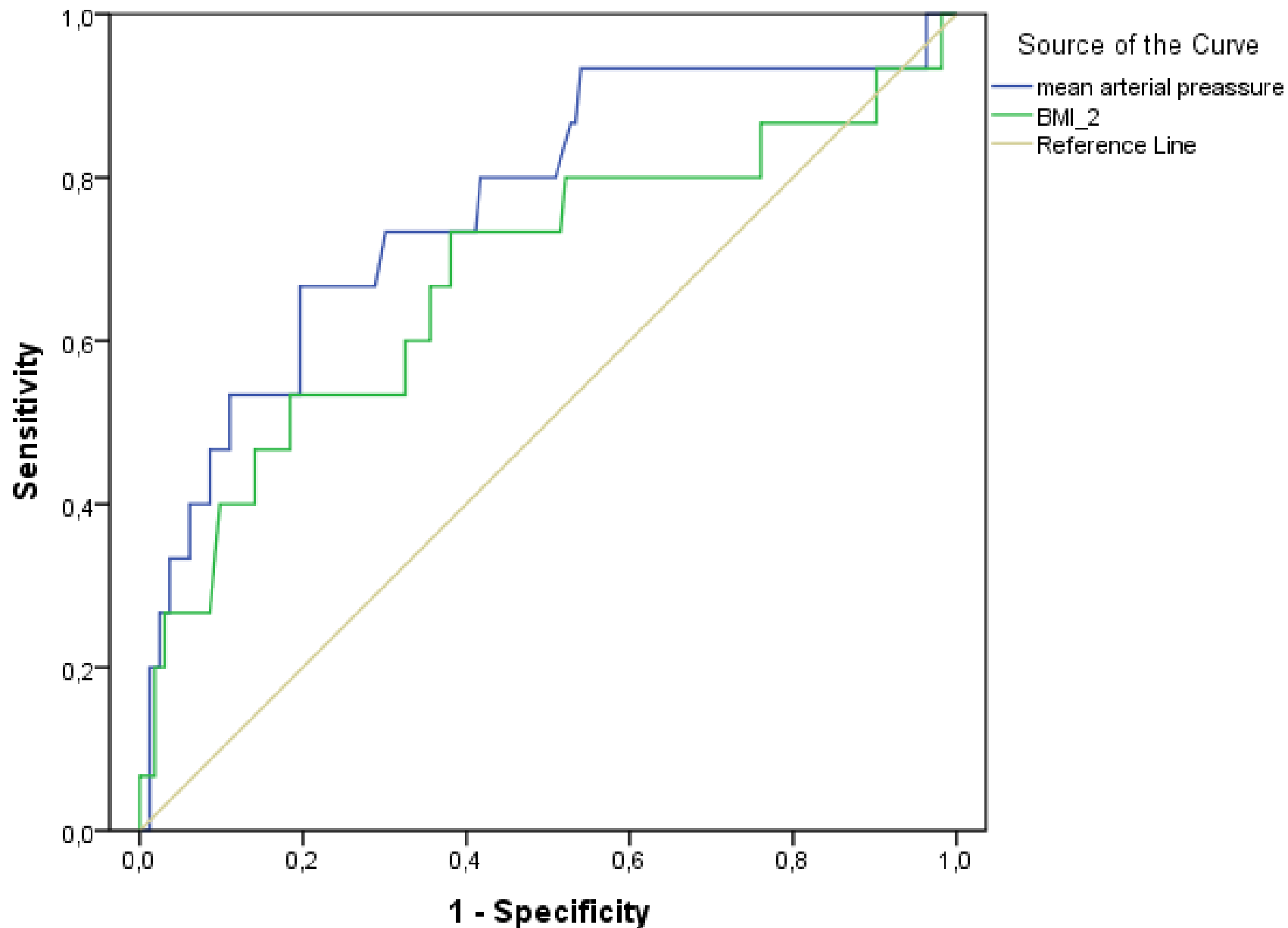
Demografická charakteristika



Výsledky gravidit po porodu

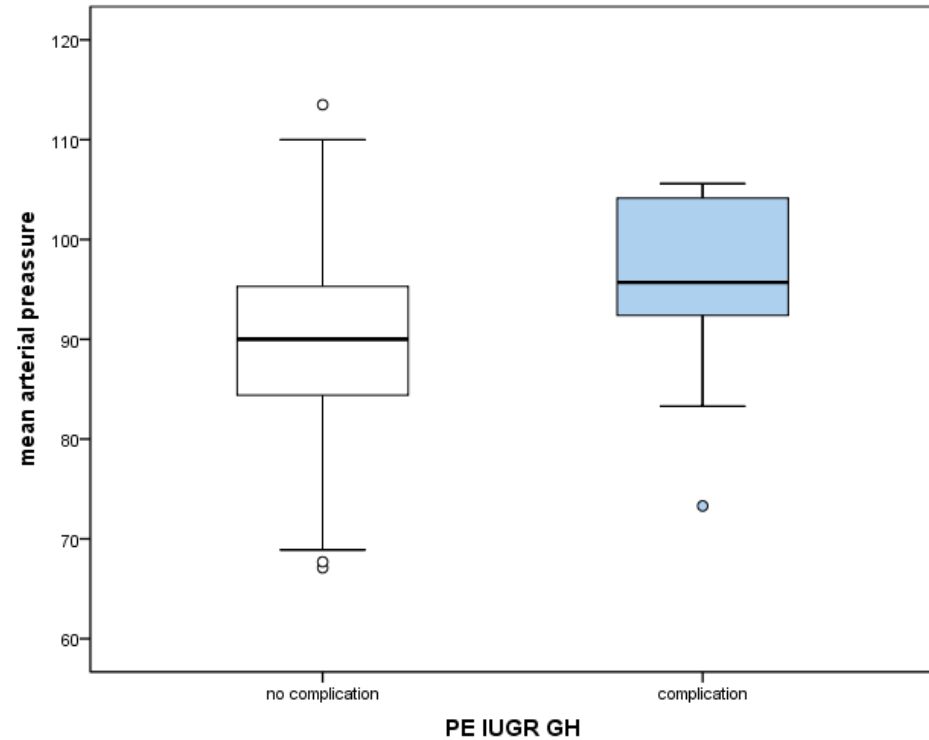
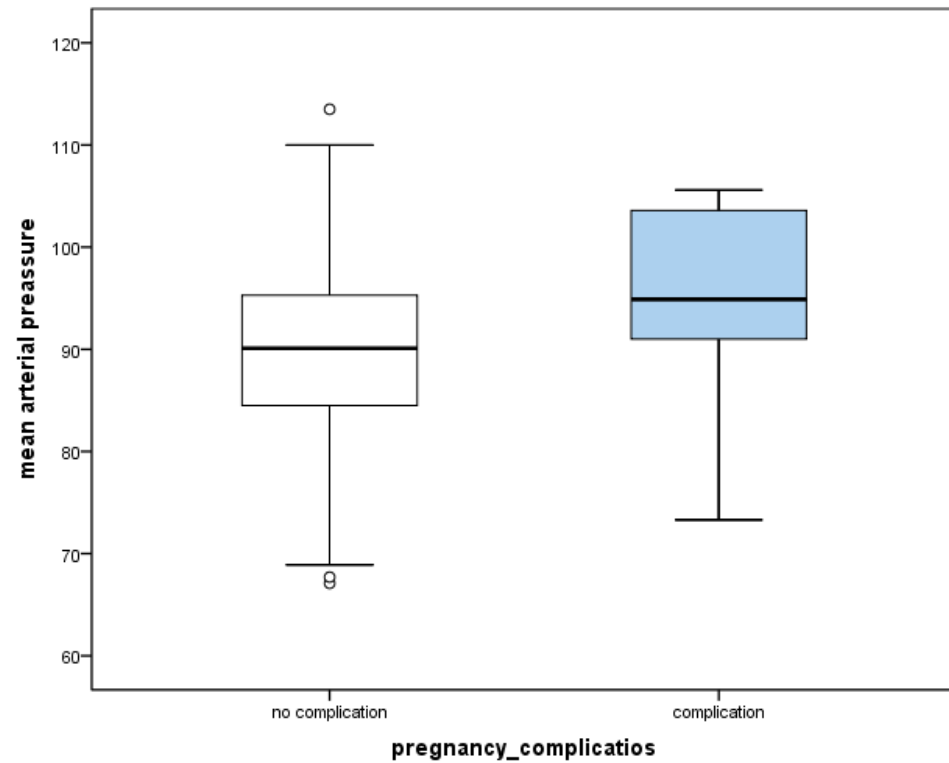


ROC Curve



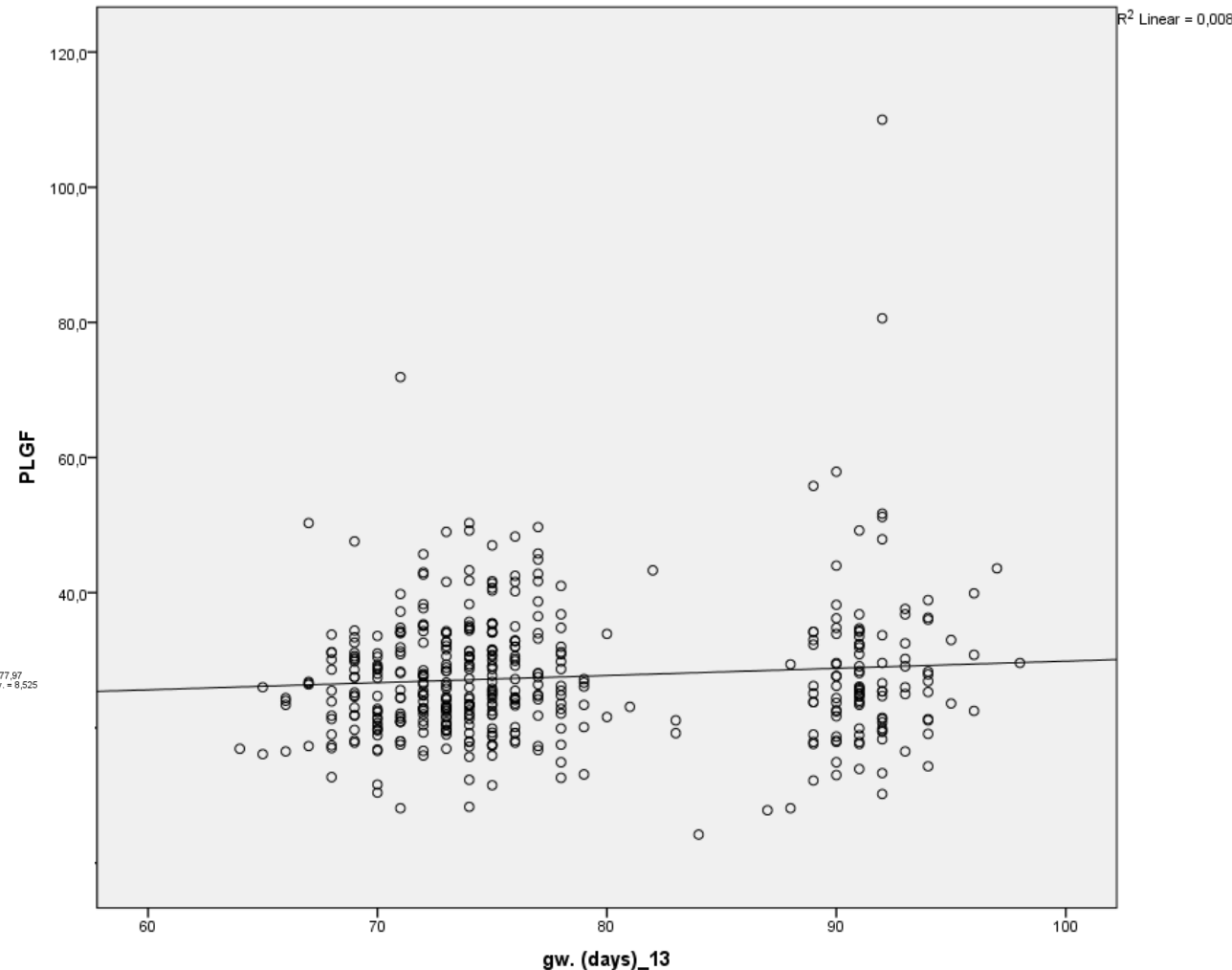
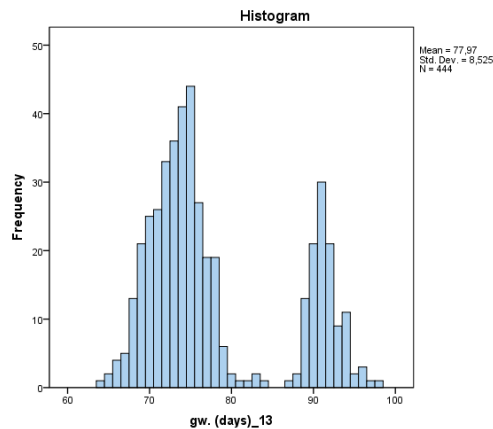
Diagonal segments are produced by ties.

Střední arteriální tlak

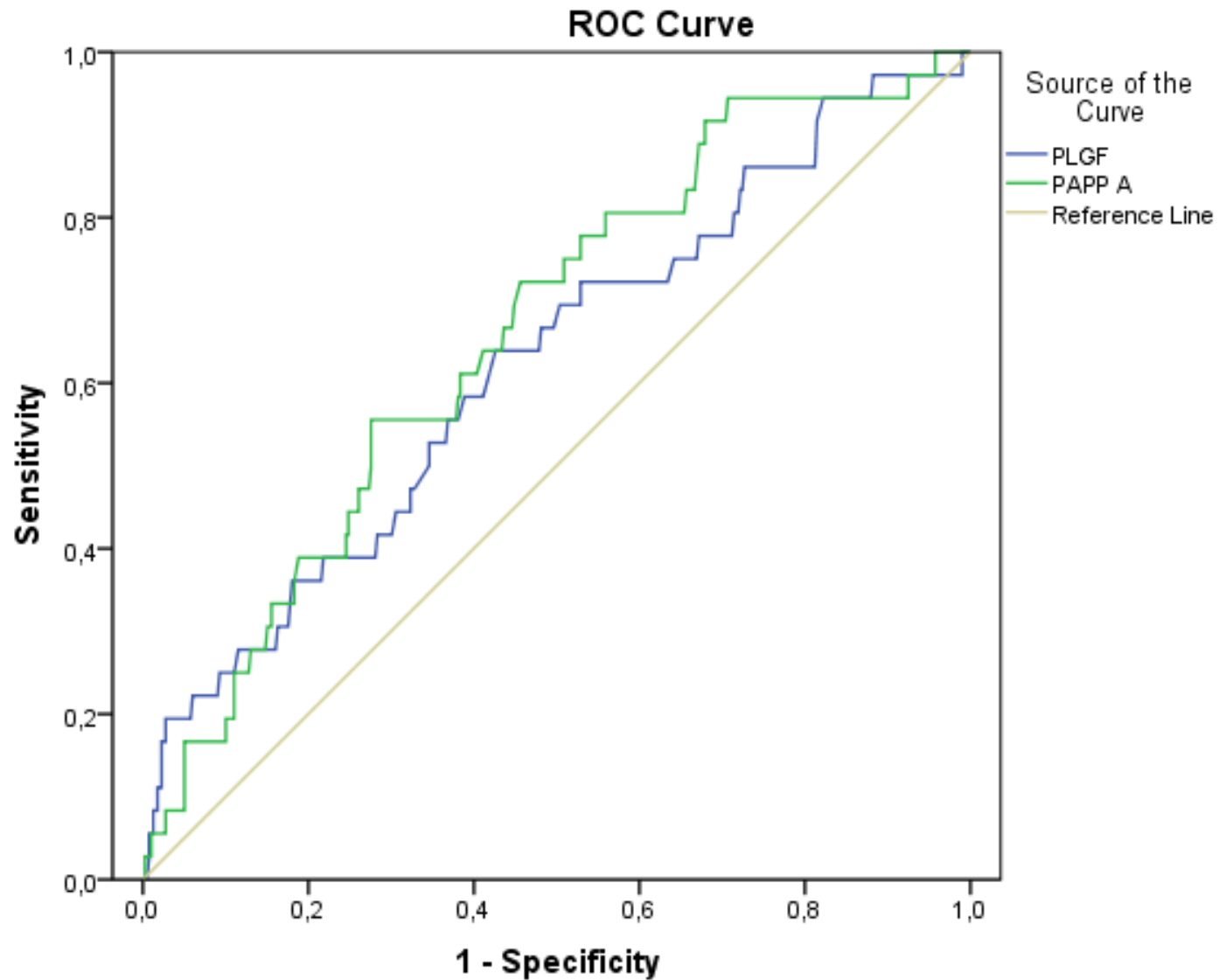


Koncentrace PlGF a týden gestace

Gestational week	number
9	46
10	229
11	49
12	38
13	74
14	1



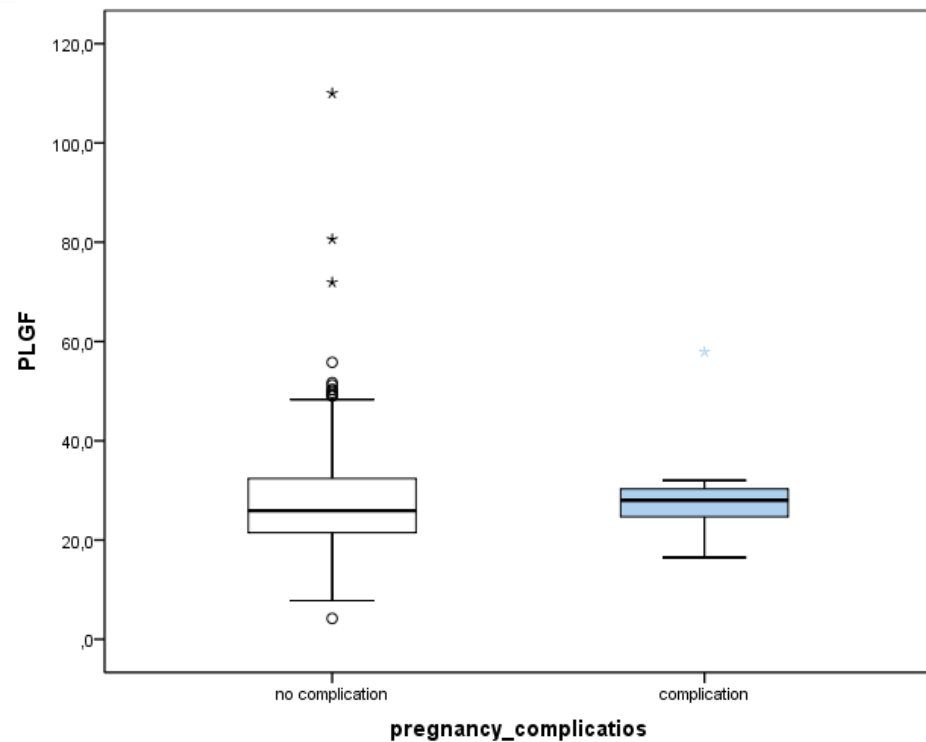
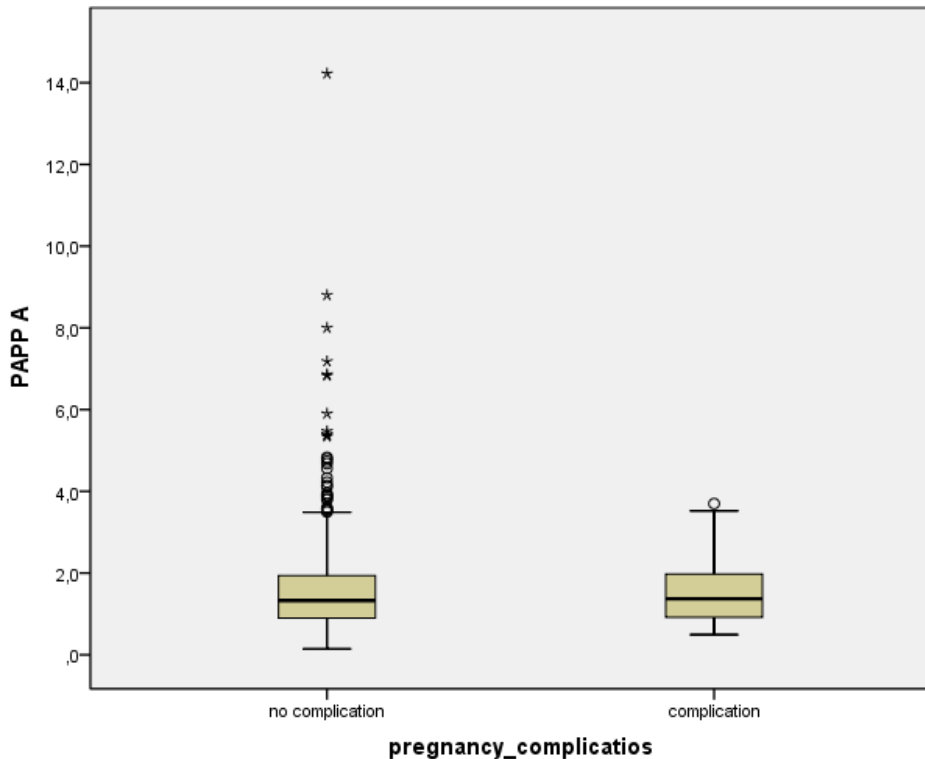
Sensitivita, specificita



Diagonal segments are produced by ties.

PAPP-A

PLGF



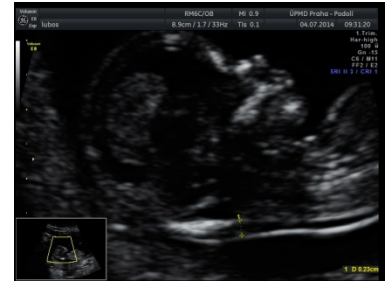
Závislost výskytu komplikací na výsledku screeningu

Screening	PE	GH	IUGR	SGA	HELLP	SC
Negative - 178	1 (0,6%)	7(3,9%)	0	1(0,6%)	1(0,6%)	75 (42%)
Positive - 19	1 (5,2%)	6(32%)	1 (5,2%)	0	0	1 (47%)

PE IUGR GH * ASA Crosstabulation

			ASA		
			0	1	Total
PE IUGR GH	no complication	Count	411	16	427
		% within PE IUGR GH	96,3%	3,7%	100,0%
	complication	Count	12	4	16
		% within PE IUGR GH	75,0%	25,0%	100,0%
Total		Count	423	20	443
		% within PE IUGR GH	95,5%	4,5%	100,0%

Závěr



- Trend prenatální péče se mění od pouhého screeningu aneuploidií k časnému zhodnocení rizikových gravidit.
- Screening složený z ANA, MAP, PI Aut, PIGF, PAPP-A – s možností profylaxe ASA a intenzivnější prenatální péče.
- Časná diagnostika (změnou definice?) a prognostika onemocnění. Nové možnosti terapie?

Děkuji za pozornost

