THE FEATURES OF KIDNEY IMPAIRMENT IN EARLY AND LATE PREECLAMPSIA (PE)

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Introduction

An excess of sFlt-1 produced by ischemic placenta plays a key role in pathogenesis of the PE by means of inhibiting VEGF and PlGF. The deficiency of VEGF leads to endothelial damage and thrombotic microangiopathy as a morphological base of the renal injury and all clinical manifestations of PE. It is still unknown how the term of PE onset impacts on the severity of kidney injury.

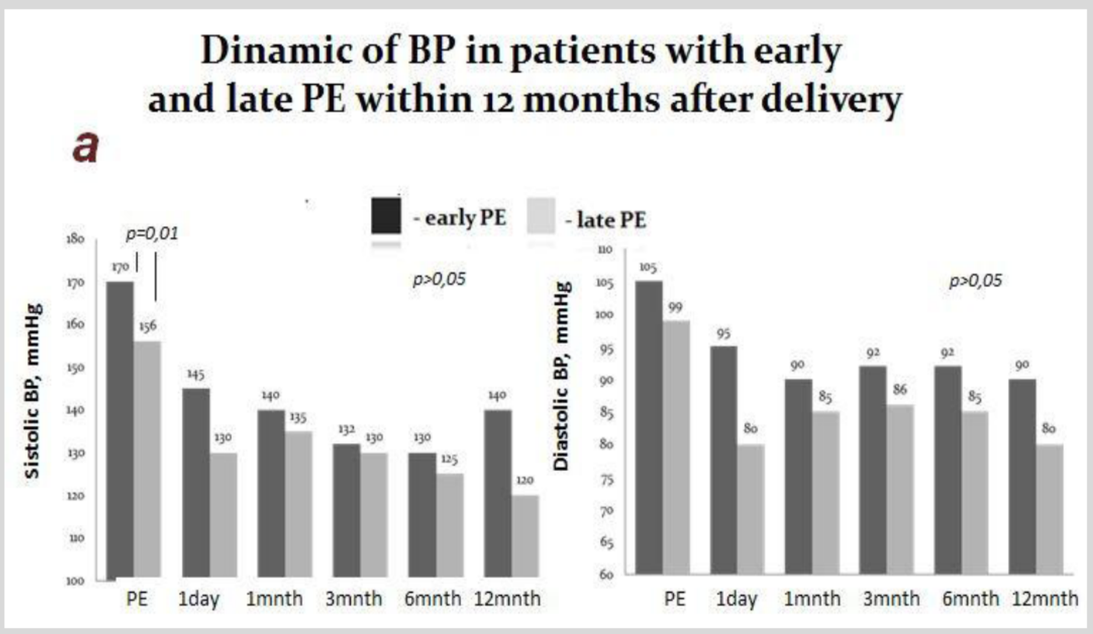
THE AIM: to assess and compare the severity of renal manifestation, the levels of sFlt-1 in early PE, late PE and postpartum.

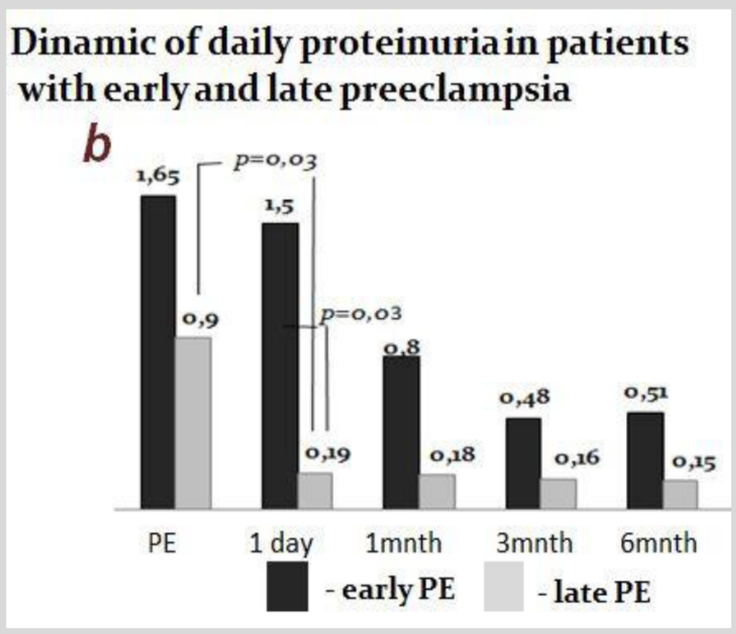
Patients and Methods

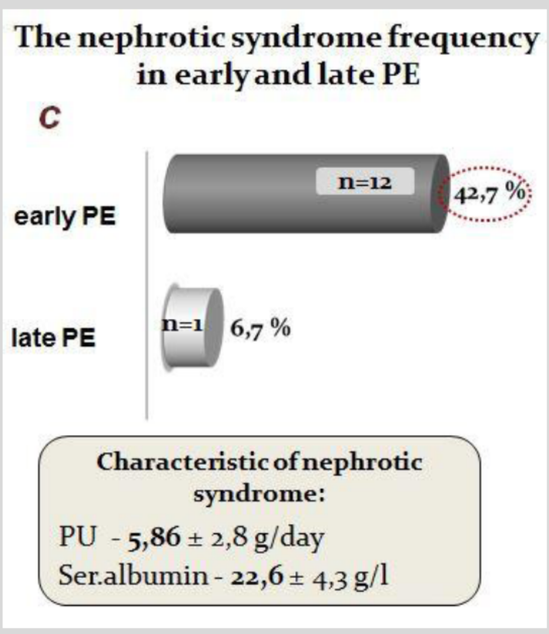
A clinical picture and laboratory tests of 62 women (32.7 +/-5.7 years old) with PE were analyzed. All the women had no symptoms of the kidney diseases before pregnancy. The patients (pts) were divided into two groups depending on the PE beginning: with early PE (n=38) - gestational age (GA) 25-34 weeks (Me 31 [29;34] wks) and late PE (n=16) - GA 35-40 wks (Me 38 [36;39] wks). The control group (C) included 8 healthy pregnant women, GA 36-40 wks. ELISAs for human sFlt-1 was performed with the use of commercial kits (eBioscience). The blood pressure (BP) level, concentration of serum creatinine (SCr), glomerular filtration rate (GFR), daily proteinuria (PU) and microangiopathic hemolysis (MAHA) markers (anemia, LDH, schistocytes) were studied from PE onset until then 12 months after delivery and shown in graphs.

Results

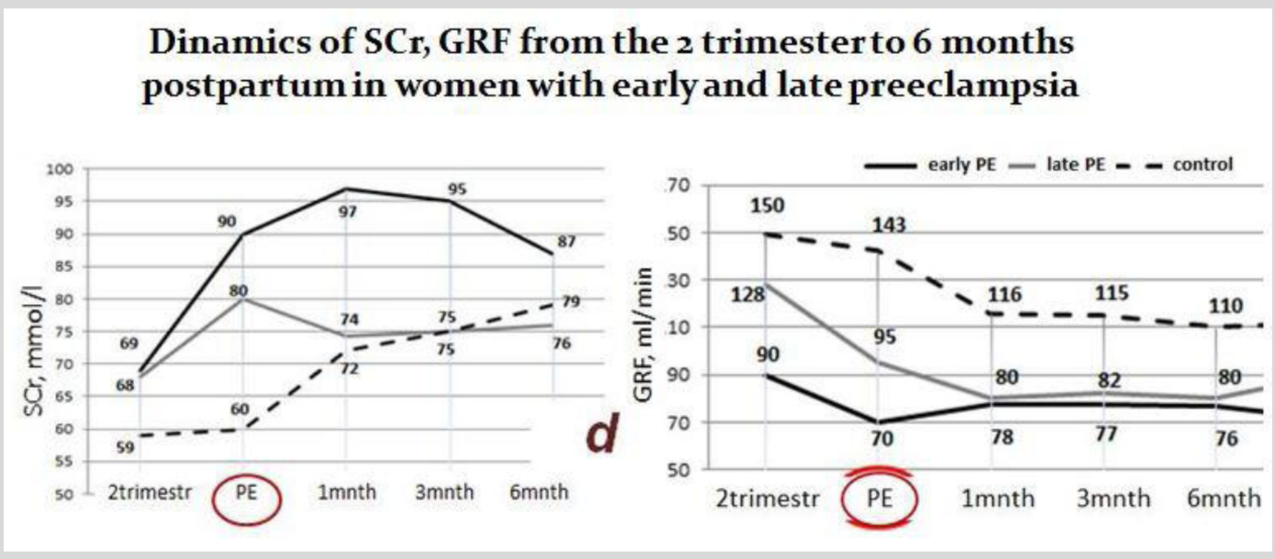
Women with early PE had higher BP than those with late PE both in pregnancy and after delivery (*a*). PU was twice higher in early PE than in late PE (*b*). The nephrotic syndrome frequency in early PE pts was sixfold greater than in those with late PE (*c*).

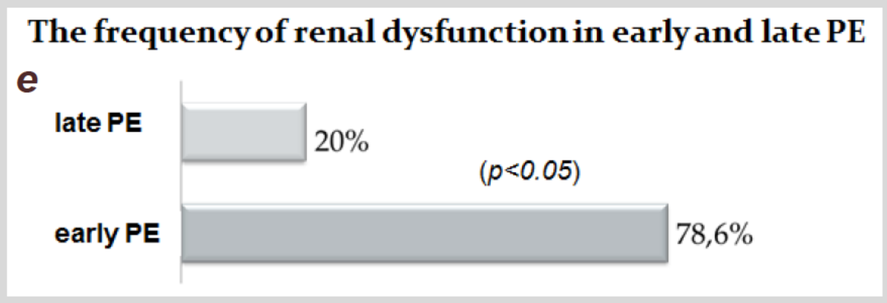






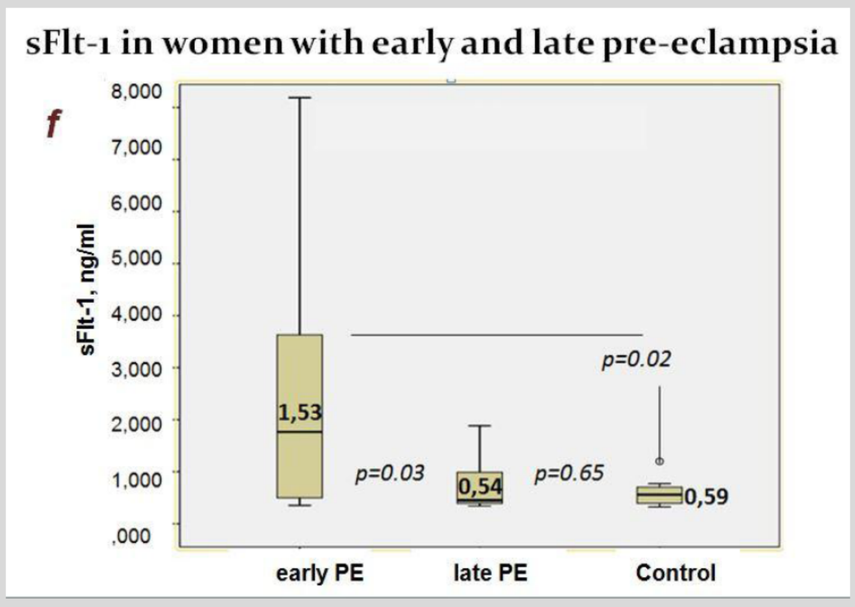
The frequency of renal dysfunction in early PE pts was fourfold greater than in those with late PE (*d,e*).





1/3 pts with early PE had laboratory markers of MAHA and only 50% of them had HELLP-syndrome. There was no MAHA signs in late PE pts. The sFlt-1 level in pts with early PE was 3 times higher than in those with late PE (p=0.03) (*f*). The sFlt-1 level in late PE pts did not differ from its level in the control group (*f*).

An inverse correlation was found between GFR and sFlt-1 (r=-0,42; p=0,05), MAHA and GRF (r=-0.86; p=0.005) and direct correlation – between SCr and LDH (r=0,7; p=0,0002) in early PE pts. The correlation between PU and sFlt-1 was not found.



Conclusions

There were more severe clinical manifestations of renal impairment in all pts with early PE as compared to women with late PE and control group. The symptoms of nephropathy persist at least of 12 months after delivery in early PE pts and disappeared in late PE pts. We suppose the early and the late PE are various clinical conditions with different outcome.

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