

## A new angiogenic classification with PlGF and sFlt-1 for hypertensive disorders of pregnancy

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**Objective.** The ratio between two angiogenic markers, sFlt-1 (Soluble fms-Like Tyrosine Kinase-1) and PlGF (Placental Growth Factor), plays a crucial role in managing hypertensive disorders of pregnancy (HDP), notably preeclampsia (preE), aiding in diagnosis and outcome prediction. This study aimed to demonstrate the non-equivalence of sFlt-1/PlGF ratios within current risk categories and suggest a new classification.

**Materials and Methods.** A retrospective study analysed singleton pregnancies hospitalized for HDP after the 20<sup>th</sup> gestational week from May 2018 to December 2020. Patients were classified based on the sFlt-1/PlGF ratio (low < 38, medium 38-85/110\*, high > 85 or > 110\*, and very high > 655 or > 201\* – \*after the 34<sup>th</sup> week) and into nine categories respecting PlGF and sFlt-1 levels for gestational age (GA) (within range, above or below).

**Results.** The cohort comprised 182 patients, with a mean GA

at testing of 35+1 weeks (21-41+1) and at delivery of 36+6 weeks (23+3-41+3). Notable categories included Category 6 (PlGF below range-sFlt-1 above range, 38%) and Category 1 (both PlGF and sFlt-1 within reference range, 30%). Category 6 patients had the highest risk of adverse outcomes, including premature birth (75%), urgent caesarean section for HDP complications (48%), the necessity of antihypertensive therapy before and after delivery (64 and 67%), a higher percentage of growth-restricted fetuses (59%), and severe clinical presentations (36%).

**Conclusions.** A new classification system for PlGF and sFlt-1, which considers alterations of each marker relative to GA at testing, improves the management of HDP compared to current stratification. This approach helps to avoid underestimating high-risk cases with a low/medium ratio and enables better stratification of the high-risk category.