Predicting the progression of preeclampsia to severe disease at term

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BACKGROUND

> Preeclampsia (PE) affects **5-8%** of pregnancies & is associated with hypertension and multisystem dysfunction.
> Severe PE is defined using the ACOG criteria as: severely elevated blood pressure, thrombocytopenia, impaired liver function, renal insufficiency, pulmonary oedema and/or new-onset cerebral disturbance (1)
> Most cases of PE occur **at term (≥ 37** weeks gestation).

> If we could predict which women will progress to severe PE at term, they could be treated with a small molecule therapeutic or prioritised for delivery.

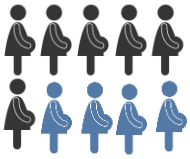
AIMS

1) Define the incidence of women progressing to severe preeclampsia at term, at a tertiary obstetric hospital, 2015-2017.
2) Compare baseline characteristics between women who progressed to severe disease and those who remained stable after admission with preeclampsia at term.

METHODS

1) Retrospective data collected from records
2) ACOG criteria used to diagnose severe PE
3) Statistical analysis performed (t-test or Chi-squared, p<0.5)
4) Model assessment for calibration using logistic regression & discrimination using AUROC.

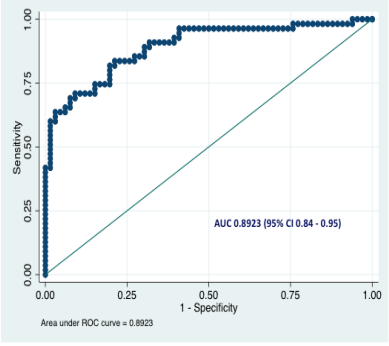
RESULTS



124 WOMEN ADMITTED WITH PE (WITHOUT SEVERE FEATURES) AT TERM

44.4% PROGRESSED TO SEVERE PE AFTER ADMISSION

Figure 1. Receiver-operating characteristic (ROC) graph of prediction model for progression to severe preeclampsia, calculated by multivariable analysis



1. Baseline Characteristics

- Women with severe PE were more likely to have **essential hypertension** than women who remained stable (20.0% compared with 1.4%, *p*=0.0005).
- No differences in maternal age, parity, body mass index, smoking status, obstetric history, past history of PE or family history of PE was observed between groups.

2. Preeclampsia at Diagnosis

	PE at term (N =69)	Severe PE at term (N = 55)	p values
Systolic blood pressure	145	150	0.0004
Diastolic blood pressure	90	95	0.003
Urine PCR	0.04	0.05	0.13
Haemoglobin (g/L)	124	116	0.03
Platelet count (x10^9/L)	202	196	0.12
Uric acid	0.34	0.36	0.01
Elevated transaminases	9	16	0.04
Serum creatinine	53	67	<0.0001
Antihypertensives	35	50	<0.0001

3. Preeclampsia at Delivery

- Women with severe PE were more likely to be **administered antihypertensives** and **magnesium sulphate** (p<0.0001)
- **Non-reassuring fetal CTG** was significantly higher in the severe PE group (43.6%) compared to the PE group (13.0%)

4. Maternal & Neonatal Outcomes

- Women with severe PE were more likely to be **admitted to HDU** (p<0.0001) and **discharged on antihypertensives** (p=0.0001)

CONCLUSION

In patients admitted with preeclampsia at term, progression to severe disease can be predicted using admission characteristics.

REFERNECES

(1) Hypertension in pregnancy. Report of the American College of Obstetricians and Gynecologists' Task Force on Hypertension in Pregnancy. Obstetrics and gynecology. 2013;122(5):1122-31

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