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Title: Periodic Assessment of Antenatal and Post Natal Serum Endothelin-1 (ET-1) and Nitric Oxide (NO) Levels in Hypertensive Disorders of Pregnancy (HDP)

Author(s): Hidayah, I (Hidayah, I); Tariq, AR (Tariq, A. R.); Jamani, NA (Jamani, N. A.); Maizura, MZ (Maizura, M. Z.)

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Abstract: Introduction: Hypertensive Disorders of Pregnancy (HDP) is an independent risk factor of cardiovascular (CVS) disease with endothelial dysfunction postulated to be the pathophysiology. Endothelin-1 (ET-1), a potent vasoconstrictor, has been identified as a pivotal mediator in HDP. Disturbances in nitric oxide (NO) bioavailability found in endothelial dysfunction may increase susceptibility to cardiovascular diseases such as hypertension. The study aims to determine serial ET-1 and NO levels in patients with HDP and its role in persistent endothelial dysfunction. Materials and Methods: Thirty-six pregnant women from the following categories (i) normal pregnant women (Control) (ii) chronic hypertension during pregnancy (CH) and (iii) pregnancy induced hypertension (PIH) participated in this study. Blood pressure indices measurements and sample collection were done at antepartum (32 weeks) and postpartum (8 weeks and 12 weeks). ET-1 and serum NO were measured using the Human ET-1 (Endothelin-1) ELISA Kit and Nitric Oxide (total) detection kit respectively. Results: Serum ET-1 was significantly higher in patients with CH (55.3 pg/ml) and PIH (35.6 pg/ml) compared to Control (11.8 pg/ml) during antenatal until 3 months postpartum (CH 38.3 pg/ml, PIH 29.5 pg/ml, Control 1.9 pg/ml). This was accompanied by significantly lower levels of serum NO in HDP patients. Conclusion: Persistently higher than normal levels of ET-1 and lower than normal levels of NO up to 3 months postpartum in patients with history of HDP indicate presence of persistent endothelial dysfunction despite BP normalisation in PIH patients. Long term NO/ET-1 imbalance may account for the increased CVS disease risk.

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Addresses: [Hidayah, I; Tariq, A. R.; Maizura, M. Z.] Int Islamic Univ Malaysia, Dept Basic Med Sci, Kulliyyah Med, Kuantan 25200, Pahang, Malaysia.
[Jamani, N. A.] Int Islamic Univ Malaysia, Dept Family Med, Kulliyyah Med, Kuantan, Pahang, Malaysia.

Corresponding Address: Hidayah, I (corresponding author), Int Islamic Univ Malaysia, Dept Basic Med Sci, Kulliyyah Med, Kuantan 25200, Pahang, Malaysia.

E-mail Addresses: hidayatulradziah@iium.edu.my

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number

Jamani, Nurjasmine Aida		0000-0002-1875-8472

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