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Brief Report

Hyperuricemia and Perinatal Outcomes in Patients with Severe Preeclampsia

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Abstract

Maternal, fetal and neonatal complications are correlated with hypertensive disorders during pregnancy. In this context, the maternal blood uric acid level is reported to be one of the prognostic factors in determining the prenatal outcome. Based on the existing data, the present descriptive study was performed on two groups of women with severe preeclampsia; the first group (n=53) with a uric acid level of ≥6 mg/dl, was compared with the second group (n=50) with a uric acid level of <6 mg/dl. A comparison between the two groups revealed that hyperuricemia in patients with severe preeclampsia, is certainly a risk factor for several perinatal complications.

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Keywords • Severe preeclampsia • Uric acid level • Perinatal outcomes

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Preeclampsia causes decreasing blood supply to organs due to vasospasm. It is almost exclusively a disease of nulliparous women.[1]

The clinical utility of serum uric acid as a marker of preeclampsia has been substantiated.[2]

Maternal hypertension, even in its severe form, without hyperuricemia is associated with a good prognosis for the fetus.[3] Perinatal mortality, however, is markedly increased when maternal plasma urate is raised. According to a study carried out in Argentina, determination of serum uric acid as a screening tool for pregnancies complicated by hypertension is an easy inexpensive method for prognostication of perinatal outcome associated with severe preeclampsia.[4] The objective of this study was to determine if serum uric acid can be used as a prognostic factor for determining the outcome of preeclampsia.

This cohort study was performed on 103 women with severe preeclampsia attending Taleghani Hospital, Tehran, Iran, between 1986 and 2001. The participants categorized into two groups, according to their serum acid uric level; group 1, those with a serum uric acid of ≥6 mg/dl (n=53) and group 2, patients with a serum acid uric of <6 mg (n=50).

Maternal and fetal complications were studied considering their intrauterine fetal death (IUFD), Apgar score, cesarean section rate, maternal mortality, intrauterine growth retardation (IUGR) and eclampsia.

A comparison between the two groups revealed that hyperuricemia in patients with severe preeclampsia, is a strong risk factor for several perinatal complications (Table 1), and increases the risk of

Table 1: Number (%) of prenatal complications in groups studied

Complication	Uric acid ≥6 mg/dl (n=53)	Uric acid <6 mg/dl (n=50)	Odds ratio (95% CI)	p value
Apgar <7	35(66)	7(14)	11.9(4.4-31.8)	<0.0001
Intrauterine fetal death	12(22)	0(0)	30.4(1.7-529)	<0.001
Cesarean section	41(77)	18(36)	6(2.5-14.4)	<0.0001
Maternal mortality	9(17)	0(0)	21.5(1.2-381)	<0.005
Intrauterine growth retardation	41(77)	18(36)	6(2.5-14.4)	<0.0001
Eclampsia	12(22)	1(2)	14.3(1.7-115)	<0.01

an Apgar score <7 by 11.9 fold, intrauterine fetal death by 30.4, Cesarean section by 6, maternal mortality by 21.5, IUGR by 6 and eclampsia by 14.3 fold in those with a uric acid level ≥6 mg/dl as compared to those a level <6 mg/dl (Table 1).

Though the exact mechanism of hyperuricemia is not still clear, making this important risk factor under control may decrease the perinatal complication rates significantly.

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