

Association Between Hyperhomocysteinemia and Recurrent Miscarriages: A Cross-Sectional Study Set in Saudi Arabia

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ABSTRACT

Background: Recurrent miscarriage is a condition that causes a lot of distress in couples, and approximately 50% of them are of unknown etiology. Numerous studies have demonstrated the role of hyperhomocysteinemia in vascular occlusions, including occlusion in the blood vessels in the placenta, which has the potential to result in recurrent loss of pregnancy.

Objective: To determine homocysteine levels in Saudi women who had recurrent miscarriages of unknown etiology

Design: A cross-sectional case-control study

Setting: The study was conducted, at the outpatient clinic of Najran University Hospital and Maternity and Child Health Hospital, Najran, Saudi Arabia and this was compared to healthy controls, from 2018 to 2019.

Subject and Methods: A cross-sectional case-control study was conducted to determine homocysteine levels in Saudi women who had recurrent miscarriages of unknown etiology, and this was compared to healthy controls, from 2018 to 2019. All participants were fully examined and evaluated by a consultant obstetrician in advance to exclude known causes of recurrent miscarriage. Plasma homocysteine concentrations were measured using homocysteine enzymatic assay.

Main outcome measures: Plasma homocysteine concentrations

Results: Eighty-eight women were included in this study; 58 had recurrent miscarriages and 30 were healthy controls. Approximately 22% of the patients and 6.6% of the healthy controls showed elevated homocysteine levels. The mean homocysteine concentration in the patients was $8.797 \pm 3.29 \mu\text{mol/l}$, which was significantly higher than that in the controls, which was $7.17 \pm 4.96 \mu\text{mol/l}$ ($P = 0.005$).

Conclusion: Hyperhomocysteinemia is a potential risk factor for recurrent miscarriages in Saudi women. Therefore, we recommend the inclusion of this investigation in the diagnostic protocols for recurrent miscarriage and further investigating the cause of the hyperhomocysteinemia.

Limitation: Sample size was small.

Conflict of interest: None

Key words: Recurrent miscarriages, Pregnancy, hyperhomocysteinemia, Saudi Arabia.

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