

# Risk and Clinical Treatment of Oxidative Stress in Hypertensive Diseases Pregnancy with Gestational Diabetes Mellitus: A Prospective Cohort Study

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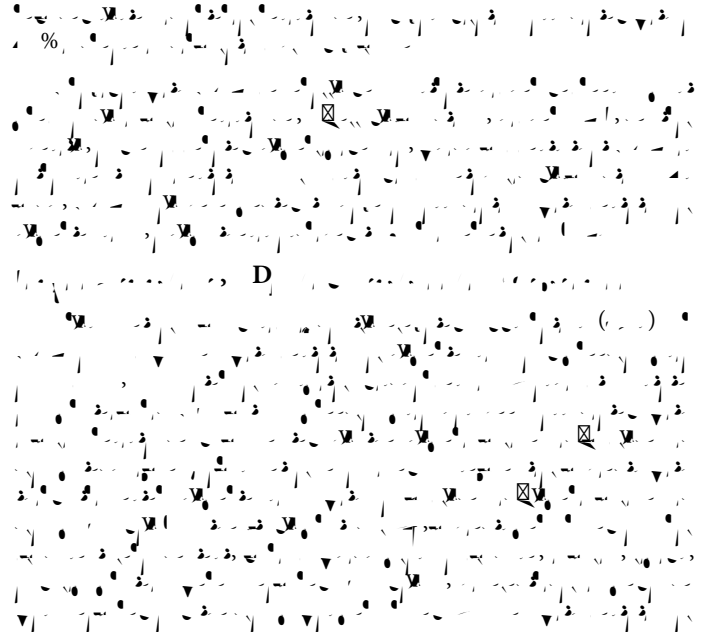
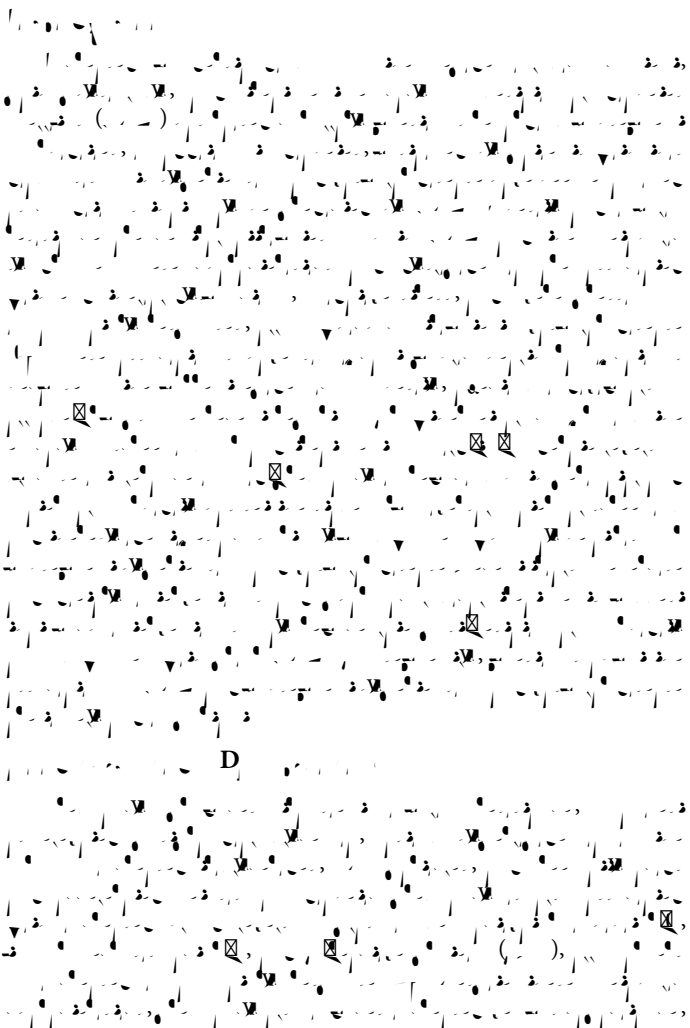
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## Abstract

**Introduction:** Oxidative stress is linked to the development of gestational diabetes mellitus (GDM). Maternal antioxidant vitamins in early pregnancy may play a role in GDM occurrence. We aimed to investigate the associations of vitamins A and E in early pregnancy with the risk of GDM and to explore whether these antioxidant vitamins can be biomarkers for the early prediction of GDM.

**Methods:** We carried out a prospective cohort study conducted in Beijing and enrolled pregnant women with vitamins A and E measurements at 9 weeks of gestation and having one-step GDM screened with a 75-g oral glucose tolerance test between 24 and 28 weeks of gestation.

**Results:** Vitamin A levels were significantly higher in women with GDM compared to women without GDM and positively correlated with fasting blood glucose. In multivariate models, vitamin A levels were significantly associated with the risk of GDM. Vitamin E levels were not significantly associated with the risk of GDM. The findings suggest that vitamin A levels in early pregnancy may be a biomarker for the early prediction of GDM.



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Abstract

Introduction: Oxidative stress is a key factor in the pathogenesis of hypertension and gestational diabetes mellitus (GDM). This study aims to evaluate the risk and clinical treatment of oxidative stress in hypertensive diseases pregnancy with GDM.

Methods: A prospective cohort study was conducted involving pregnant women with hypertensive diseases and GDM. The study included 100 participants, divided into two groups: 50 in the hypertensive group and 50 in the GDM group. The study duration was 12 weeks. The primary outcome was the level of oxidative stress, measured by the Malondialdehyde (MDA) and Superoxide Dismutase (SOD) levels. The secondary outcome was the clinical treatment of oxidative stress, measured by the use of antioxidants.

Results: The study showed that the level of oxidative stress was significantly higher in the hypertensive group compared to the GDM group. The clinical treatment of oxidative stress was significantly higher in the hypertensive group compared to the GDM group.

Conclusion: Oxidative stress is a key factor in the pathogenesis of hypertension and GDM. The clinical treatment of oxidative stress is significantly higher in the hypertensive group compared to the GDM group.

