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INFLAMMATORY AND VITAMIN D PROFILES ACROSS CLINICAL GRADES OF PREECLAMPSIA: A SOURCE-BASED ANALYSIS

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Annotation

Preeclampsia is associated with systemic endothelial dysfunction and inflammatory signalling. C-reactive protein (CRP) is a nonspecific marker of inflammation, while vitamin D status has been investigated in relation to placental function and pregnancy outcomes. The clinical meaning of either marker depends on the population, gestational age, assay, and potential confounding factors. To describe the CRP and 25-hydroxyvitamin D [25(OH)D] concentrations reported for women with moderate and severe preeclampsia and for a control group in a dissertation-derived clinical cohort.

Keywords: preeclampsia; C-reactive protein; vitamin D; 25-hydroxyvitamin D; D-dimer; inflammation; pregnancy.

Aim. The aim was to describe the reported CRP and 25(OH)D profiles across the control, moderate preeclampsia, and severe preeclampsia groups, and to interpret the findings without overstating their diagnostic or prognostic value.

Materials and methods. The source study was conducted during 2022–2025 and included 135 women: 35 controls, 50 with moderate preeclampsia, and 50 with severe preeclampsia. The final reported group summaries were CRP values in mg/L and 25(OH)D values in ng/mL, expressed as mean ± standard deviation. The source also reports an exploratory Spearman correlation analysis between CRP and D-dimer within clinical groups. Nine comparisons were considered, and Holm correction was applied to account for multiple testing. This thesis reports the source's summaries and does not claim a new independent statistical analysis.

Results. Mean CRP was reported as 7.575±0.305 mg/L in the moderate preeclampsia group, 10.578±2.047 mg/L in the severe preeclampsia group, and 3.418±0.637 mg/L in controls. The descriptive pattern shows higher CRP concentrations in both preeclampsia groups, with the highest mean in severe disease. Since CRP is nonspecific, these values cannot independently identify the cause of inflammation or establish disease severity in an individual patient. Mean 25(OH)D concentrations were reported as 10.788±0.924 ng/mL in moderate preeclampsia, 9.933±0.527 ng/mL in severe preeclampsia, and 39.845±6.083 ng/mL in controls. The source therefore describes substantially lower 25(OH)D values in both preeclampsia groups. These are source-reported summaries and should be checked against the original laboratory records, assay platform, timing of blood collection, and individual-level data before publication. In the severe preeclampsia group, the source reported a Spearman correlation between CRP and D-dimer of $\rho=0.311$, $p=0.028$ before adjustment. After Holm correction for nine comparisons, the adjusted p value was

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0.252. The association therefore did not remain statistically significant after correction for multiple testing. The unadjusted result should not be presented as conclusive evidence of a reproducible biomarker relationship.

Discussion. The observed pattern of higher CRP and lower 25(OH)D in preeclampsia groups may justify further investigation, but the observational design cannot establish whether these differences precede disease, arise as a consequence of disease, or reflect other factors. Group means also do not show the degree of overlap between individuals, which is essential when considering diagnostic use. Potential confounders include gestational age, season, body mass index, nutritional intake, supplementation, infection, renal function, and differences in laboratory methods. The source summary does not provide a prospective prediction analysis, receiver-operating-characteristic curves, validated cut-off values, or external validation. Therefore, neither CRP nor 25(OH)D can be recommended as a stand-alone preeclampsia prediction test on the basis of these data. The correlation analysis illustrates the importance of multiple-testing correction. A nominal p value below 0.05 may not remain significant after accounting for the number of comparisons. Future studies should prespecify primary outcomes, standardize sample collection and assays, report effect sizes with confidence intervals, adjust for clinically relevant confounders, and validate any proposed biomarker panel in an independent cohort.

Conclusion. CRP was reported to be higher and 25(OH)D lower in the moderate and severe preeclampsia groups than in controls. An exploratory CRP–D-dimer correlation in severe preeclampsia did not remain statistically significant after Holm correction. The results are descriptive and hypothesis-generating; prospective and independently validated studies are needed before these biomarkers can be incorporated into a clinical risk-prediction strategy.

References:

1. Rana S, Lemoine E, Granger JP, Karumanchi SA. Preeclampsia: Pathophysiology, Challenges, and Perspectives. Circulation Research. 2019;124(7):1094–1112.
2. Burton GJ, Redman CW, Roberts JM, Moffett A. Pre-eclampsia: pathophysiology and clinical implications. BMJ. 2019;366:l2381.
3. American College of Obstetricians and Gynecologists. Gestational Hypertension and Preeclampsia: ACOG Practice Bulletin, Number 222. Obstetrics & Gynecology. 2020;135(6):e237–e260.