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POSTER PRESENTATION – P40

THE BIOLOGICAL EXPRESSION OF SOCIAL HIERARCHY: CHILDHOOD STRESS IN AN EARLY STATE CONTEXT IN URARTIAN KINGDOM (9–7TH CENTURY BCE)

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Background: The emergence of social hierarchies during the early formation of states resulted in unequal exposure to environmental and physiological stress, particularly within urban settings. The Van Citadel, the capital of the Urartian Kingdom established in the 9th century BCE, alongside the adjacent Old Van City, presents a unique context. Despite their geographical proximity, these contexts represent distinct socio-political strata and urban inequality, the Citadel associated with elite or military groups whereas the Old City reflecting the civilian groups.

Objective: This study aimed to assess the impact of social stratification on childhood health by comparing skeletal stress markers between these two subpopulations.

Materials and methods: The sample comprises 70 juvenile individuals (Van Citadel n=47; Old Van City n=23). Skeletal stress markers, including porotic hyperostosis, cribra orbitalia, diploe thickening, periostitis, enamel hypoplasia (LEH, PEH), rickets, and spina bifida, were evaluated using macroscopic methods. Group differences were analysed using Fisher's exact tests, odds ratios (OR), and regression models controlling for age.

Results: Although no statistically significant differences were observed, effect size estimates revealed distinct stress profiles. Developmental stress, as indicated by linear enamel hypoplasia, was more prevalent in the Van Citadel (OR=2.50), whereas metabolic stress markers such as porotic hyperostosis and cribra orbitalia were relatively more frequent in the Old Van City. Infectious conditions were rare but slightly more prevalent in the Citadel.

Conclusions: These findings suggest that urban inequality in an early state society influenced the biological expression of stress rather than its overall prevalence. Children in the Old Van City experienced greater chronic nutritional stress, while those in the Citadel exhibited patterns consistent with episodic developmental disruption. By integrating bioarchaeological evidence with models of early state formation, this study demonstrates that social inequality was biologically embodied in distinct childhood stress pathways, affecting not the magnitude but the expression of physiological stress.

Keywords: Bioarchaeology; Social inequality; Childhood stress; Urartian Kingdom; Early state societies.