COMMUNICATIONS IN PROLACTIN RESEARCH

SPECIAL ARTICLE

Call for Submissions: Prolactin in Cardiovascular Disease, Prolactin Reference Ranges, and Clinical Significance of Hypo- and Hyperprolactinemia

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Keywords

cardiomyopathies, reference ranges, clinical trials, vasoinhibin levels, 16 K PRL

Abbreviations

NCT, National Clinical Trial number

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Specific ranges of circulating prolactin levels are associated with cardiovascular risk (1), endothelial function (2, 3), and the metabolic state (4, 5), and a functional role of prolactin is suggested by experimental evidence showing direct, molecular, mechanistical involvement (6, 7). Prolactin and an excessive generation of its proteolytic fragment vasoinhibin have been reported to be causal for the development of peripartum cardiomyopathy (8) and, in consequence, treatments using bromocriptine and cabergoline were evaluated in clinical studies (9, 10); a Cochrane review evaluating such pharmacological interventions for peripartum cardiomyopathy and a randomized, placebo-controlled study are underway (NCT05180773) (11). A role of prolactin and its proteolytic fragment vasoinhibin (also referred to as 16 K PRL), is also assumed in Takotsubo syndrome (broken-heart-syndrome), a stress-related cardiomyopathy presenting with transient left ventricular dysfunction (12). Yet, prolactin levels are seldomly measured longitudinally over the course of these cardiomyopathies, and new immunometric techniques for the quantification of circulating vasoinhibin levels have not been applied in the respective investigations (13). Other studies do not confirm an association between prolactin and the incidence of cardiovascular risk factors (14, 15), and the significance of prolactin levels in metabolism is debated (16).

The discussion about the clinical significance of prolactin levels is further complicated by the recognition that some traditional reference ranges for prolactin, especially those provided by assay manufacturers, are insufficient for the study of prolactin and clinical decision-making in healthy and diseased individuals, or populations, respectively (17, 18). A new, metabolic classification for prolactin levels has been suggested, proposing that prolactin levels between 25 and 100 µg/l may constitute a regulatory, physiological response for maintaining metabolic homeostasis (19). Prolactin levels toward the lower quartile of traditional reference ranges, or below, may be considered metabolically detrimental with potential cardiovascular morbidity, and 'hypoprolactinemia' is emerging as a new clinical entity (20).

Which are the unknown constituents of the network that regulates circulating prolactin levels, both at the central nervous system and at the organismal level? To what extent are circulating prolactin levels impacted by the proteolytic cleavage of prolactin, i.e. the generation of vasoinhibin (21)? What is the significance and clinical phenotype of drug-induced hyperprolactinemia, such as in patients receiving psychiatric drugs?

These questions mandate targeted investigations, and this Journal provides the ideal framework for their communication.

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Conflict of Interest Statement

JT has submitted international patent applications concerning monoclonal vasoinhibin antibodies (PCT/EP2024/073698) and synthetic vasoinhibin peptides (PCT/EP2020/069154).

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