

0024 - MACROPROLACTINEMIA SCREENING REQUEST IN CHILDREN AND ADOLESCENTS AT A TERTIARY CARE HOSPITAL: A 10-YEAR RETROSPECTIVE STUDY

Mode: Research paper

Thematic Unit: Pituitary Gland / Prolactin

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Background/Objectives: Macroprolactinemia is a frequently overlooked cause of apparent hyperprolactinemia. Its identification is important because current immunoassays are not able to distinguish between monomeric prolactin (PRL) and macroprolactin (MPRL). It may lead to unnecessary diagnostic procedures and treatments. This study aimed to investigate the presence and identify the causes of macroprolactinemia in patients requiring MPRL test.

Methods: An observational and retrospective study was conducted on 9,683 patients that had PRL test request between Jan 2015-Dec 2025 from a tertiary care hospital in Argentina. Of those, MPRL test was requested in 82 samples, duplicate patient requests and those not carried out were excluded. Therefore, 57 samples were analyzed, 43 were women (Tanner Stage (TS) $\geq$ M2: 77%, undetermined: 12%), median age (range): 14 (0.7-19.7) years (y) and 14 men (TS $\geq$ G2: 43%, undetermined: 7%), 9 (6.0-14.8) y. Samples were analyzed using polyethylene glycol (PEG) precipitation method and recovery percentage (R%) was calculated as the ratio of Post-PEG PRL (PEG-PRL) to PRL, R%

Results: Although MPRL testing request was 0.9%, positive MPRLs were 32% and indeterminate 5%. Among women, median PRL (range) ng/mL level: 69.6 (10.1-699.7) and PEG-PRL: 14.5 (1.6-577.6), 14/43 had positive MPRL, all TS $\geq$ M2, 3/43 had an indeterminate R% and 26/43 had negative result for MPRL of which 5/26 had a prolactinoma, 2/26 presented others central nervous system (CNS) tumors and 19/26 had other causes associated with hyperprolactinemia. Among men, PRL: 42.8 (1.6-150.4) and PEG-PRL: 12.3 (1.7- 60.4), 4/14 had MPRL of which 15% were $\geq$ G2 and 10/14 had negative result for MPRL of which 5/10 presented others CNS tumors and 5/10 had other causes associated with hyperprolactinemia.

Conclusion: Although apparently higher in women, no significant differences in MPRL presence were observed between sexes. However, all women with positive MPRL were in pubertal TS. It was found that 11% of MPRL testing was requested even when PRL levels fell within the reference range which could be attributed to an



incorrect request. The proportion of indeterminate results for MPRL was low. MPRL must be included in the differential diagnosis of hyperprolactinemia in children and adolescents, who are asymptomatic.

