

Evaluating the prevalence of macroprolactinemia and hyperprolactinemia and comparing their clinical and radiological signs in infertile women

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Abstract

Introduction: Prolactin exists in three different molecular forms, i.e., monomeric, big and big big (macroprolactin) in human serum. Macroprolactin is a complex of prolactin and IgG and may account for a significant proportion of idiopathic hyperprolactinemia. Its biological activity is considered low or absent, but it is measured alongside free prolactin in common immunoassay methods, thus can wrongly lead to high prolactin detection, expensive explorations and ineffective treatments. Conventionally, the diagnosis of macroprolactinemia has been done by gel filtration chromatography, which could not be used routinely. Recently polyethylene glycol (PEG) has been employed to precipitate macroprolactin, allowing its detection rapidly, trustworthily and inexpensively. The objectives of the present study have been to evaluate the prevalence of macroprolactinemia in infertile women with hyperprolactinemia through identification with PEG and to compare the clinical (Galactorrhea and oligomenorrhea) and radiological findings (Sella turcica MRI).

Materials & Methods: 17 infertile women with hyperprolactinemia were investigated for macroprolactin by using PEG. Prolactin was measured before and after precipitation of macroprolactin by PEG. A prolactin recovery >60% after precipitation was an indicator of macroprolactinemia. The results were analyzed by SPSS software and $p < 0.05$ was considered significant.

Results: Macroprolactinemia was diagnosed in six (35%) women. In true hyperprolactinemic women (11 women), galactorrhea occurred in 81.8% and oligomenorrhea in 90.9% of them, but in macroprolactinemic women galactorrhea occurred in 33.3% and oligomenorrhea in 16.6%. In addition, normal pituitary images were found in 45.5% of the patients who had true hyperprolactinemia; however, 100% of the women with macroprolactinemia had normal pituitary images.

Conclusion: Macroprolactinemia evaluation by PEG in infertile women with hyperprolactinemia is recommended before extensive diagnostic and therapeutic procedures.

Key Words: Prolactin, Macroprolactin, Hyperprolactinemia, Macroprolactinemia, Polyethylene glycol (PEG), Infertility, Galactorrhea, Oligomenorrhea.

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