

## Hyperprolactinemia: An often missed cause of male infertility

Sir,

Prolactinoma is the most common tumor of pituitary gland, comprising up to 45% of all pituitary tumors.<sup>[1]</sup> Prolactinoma is the most common cause of hyperprolactinemia, which

is a common cause of infertility in males and females.<sup>[1,2]</sup> Clinical presentation of the prolactinomas are earlier in females compared with males, even when they are very small (microadenoma).<sup>[1,2]</sup> This earlier presentation in females is due to greater symptom burden caused by hyperprolactinemia in them.<sup>[1]</sup> On the other hand, males present late till prolactinoma becomes large in size (macroprolactinoma) and start causing pressure over optic chiasm and presented as visual deterioration or visual field defects. They can also present with decreased libido.<sup>[1]</sup> So clinical diagnosis of prolactinoma in male patients is late, which can lead to misdiagnosis of microprolactinoma in male patients.<sup>[2]</sup>

Hyperprolactinemia causes infertility in around 11% of oligospermic males.<sup>[3]</sup> Hyperprolactinemia inhibits the pulsatile secretion of the gonadotrophin releasing hormone, which causes decreased pulsatile release of follicle stimulating hormone, luteinizing hormone, and testosterone, which in turn causes spermatogenic arrest, impaired sperm motility, and altered sperm quality.<sup>[3]</sup> It later produces secondary hypogonadism and infertility.<sup>[3]</sup> Hyperprolactinemia also directly influences spermatogenesis and steroidogenesis by acting on prolactin receptors present in Sertoli cells and Leydig cells in testes, and produces primary hypogonadism and infertility.<sup>[3]</sup> It is seen that oligospermic or azospermic patients with normal serum levels of gonadotrophins show relatively higher serum levels of prolactin, proving a role of prolactin in gametogenesis, which is independent of gonadotrophins.<sup>[3,5]</sup> There are many studies suggesting that hyperprolactinemia has a definite role in the male infertility, and is one of the reversible causes of infertility.<sup>[2-5]</sup> It can be managed medically with simple medication, such as bromocriptine and cabergoline, which normalizes serum prolactin levels, restoration of gonadal function, reversing infertility caused by hyperprolactinemia and induces reduction in the prolactinoma size in the majority of patients.<sup>[2,4,6]</sup>

It is a common and reversible cause of male infertility, and has excellent results with dopamine agonist drugs.<sup>[2,4,6]</sup> Misdiagnosis of hyperprolactinemia in male can lead to irreversibility of this condition and may lead toward unnecessarily expansive procedures, such as *in vitro* fertilization (IVF) for achieving pregnancies. In infertility clinic, if male patients present with decreased libido, erectile dysfunction, and hypogonadism, and semen microscopic analysis shows oligospermia or azoospermia, impaired sperm motility, or altered sperm quality, a routine evaluation of serum prolactin level should be done, which can avoid unnecessary, costly, and invasive investigation (eg, testicular biopsy) for evaluation of male infertility.<sup>[2-6]</sup>

Hyperprolactinemia is a common cause of infertility in

males but the latest European guidelines published in European Urology 2005 and revised in 2010 for evaluation of male infertility has not included the hormonal assessment of the serum prolactin level during evaluation of male infertility.<sup>[7]</sup>

After reviewing the literature, a routine evaluation of the serum prolactin level should be done in male infertility cases and included in the guideline for evaluation of male infertility. This will prevent misdiagnosis of hyperprolactinemia, avoid unnecessary costly investigations, and guide toward appropriate management to achieve pregnancy.

**Pratibha Singh, Manish Singh<sup>1</sup>, Goutham Cugati<sup>2</sup>,  
Ajai Kumar Singh<sup>3</sup>**

Departments of Obstetrics and Gynecology, <sup>1</sup>Neurosurgery, JIPMER, Puducherry, <sup>2</sup>Department of Neurosurgery, Dr. Achanta Lakshmi pathi Neurosurgical Center, Postgraduate Institute of Neurological Surgery, V.H.S. Hospital, Taramani, Chennai, <sup>3</sup>Department of Neurology, Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow, Uttar Pradesh, India

**Address for correspondence:**

Dr. Pratibha Singh,  
Department of Obstetrics & Gynaecology,  
Jawaharlal Institute of Postgraduate Medical Education and Research  
(JIPMER), Dhanvantri Nagar, Puducherry - 605 006, India.  
E-mail: drpratibha97@yahoo.co.in

## REFERENCES

1. Ciccarelli A, Daly AF, Beckers A. The epidemiology of prolactinomas. *Pituitary* 2005;8:3-6.
2. Buvat J. Hyperprolactinemia and sexual function in men: a short review. *Int J Impot Res* 2003;15:373-7.
3. Masud S, Mehboob F, Bappi MU. Severe hyperprolactinemia directly depresses the gonadal activity causing infertility. *Esculapio J Services Inst Med Sci* 2007;2:25-7.
4. De Rosa M, Zarrilli S, Di Sarno A, Milano N, Gaccione M, Boggia B, *et al.* Hyperprolactinemia in men: Clinical and biochemical features and response to treatment. *Endocrine* 2003;20:75-82.
5. Soler Fernández JM, Caravaca Magariños F, Domínguez Bravo C, Murillo Mirat J, Aparicio Palomino A, Herrera Puerto J. Correlation of serum prolactin, sperm count and motility. Prevalence of hyperprolactinemia in the infertile male. *Arch Esp Urol* 1990;43: 891-5.
6. Laufer N, Yaffe H, Margalioth EJ, Livshin J, Ben-David M, Schenker JG. Effect of bromocriptine treatment on male infertility associated with hyperprolactinemia. *Arch Androl* 1981;6:343-6.
7. Dohle GR, Colpi GM, Hargreave TB, Papp GK, Jungwirth A, Weidner W. EAU Guidelines on male infertility. *Eur Urol* 2005;48:703-11.

Access this article online	
Quick Response Code:	Website: www.jhrsonline.org
	DOI: 10.4103/0974-1208.86094