Possible role of androgens in the pathophysiology of Tourette's syndrome. *A hypothesis with clinical and therapeutic implications*

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Tourette's syndrome (TS) is a neuropsychiatric disorder characterized by multiple motor tics, and one or more vocal tics. Previous studies revealed significant male predominance of TS.[1] Bagheri, Kerbeshian, and Burd[2] report that TS is "three to nine times more frequent in males than in females." Zinner[3] says, "Data from most studies suggest a male:female ratio typically ranging from 2:1 to 4:1." Leckman and Cohen[4] report a range based on 6 studies of 1.6:1 to 9.3:1 male:female ratio. All studies agree that TS occurs more in males than in females, with a figure of approximately 4:1. Gulsun et al[5] presented a case of TS accompanied by other presentations of hyperandrogenism, such as bilateral congenital triangular alopecia. Peterson et al[6] concluded that an androgen antagonist, such as flutamide, provides marked relief in symptoms of TS; however, its clinical application is limited due to its severe side effects, especially in the pediatric age group. Bortolato et al[7] suggested Finasteride, a 5-alpha reductase inhibitor, as an androgen antagonist with limited side effects, which caused markedly improvement of symptoms in a case of adult TS.

Androgen brain signaling is thought to have a significant role in the pathophysiology of TS. Severe side effects of androgen antagonists, especially in the pre-pubertal age, hinder their clinical usage in children who comprise the most cases of TS. However, clinical implications are still applicable for cases of adult TS and the minority of severe childhood cases who persist into adulthood. As androgen antagonists and especially finasteride, produce limited side effects in the adult age group, and is approved by the Federal Drug Administration for the treatment of benign prostatic hyperplasia and alopecia, they might be considered worthwhile as a novel treatment for adults who suffer from TS. This unconventional approach may prove invaluable in the challenging treatment of adult TS.

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