

## Editorial

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## Post-Finasteride Syndrome: An Underestimated Phenomenon

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With their increased popularity in the treatment of benign prostate hyperplasia (BPH), physicians are encountering with the side effects of 5 alpha reductase inhibitors (5ARIs) (finasteride and dutasteride) more often. Although reports regarding the persistence of these problems raise the concerns of physicians and BPH patients alike,<sup>1,2</sup> annual 5ARI sales continue to increase, generating approximately half billion dollars in the United States, according to Information Management System (IMS) data.<sup>3</sup> The United States Food and Drug Administration (FDA) approval of finasteride for androgenic alopecia (AGA) contributes to the 5ARI market and broaden the population who may suffer from side effects by decreasing the age span.<sup>4</sup>

Although the exact mechanism of the side effects of 5ARIs are not completely elucidated yet, the inhibition of testosterone (T) conversion to its active metabolite dihydrotestosterone (DHT) may play a role. Consequent alterations in penile nitric oxide (NO) metabolism may be responsible for erectile dysfunction (ED) whereas alterations in the neurotransmitters in the central nervous system may cause ejaculatory dysfunction and decreased libido. These sexual side effects seem to be more frequent in higher doses and in the beginning of the 5ARI therapy.<sup>5,6</sup> Although sexual problems induced by 5ARIs diminish after the second year of the therapy in the majority of cases, some persist during the treatment or even after treatment cessation.<sup>7</sup>

When the side effects of 5ARI persist even three months after cessation of the drug and are accompanied by other physical, mental and neurological adverse effects, this clinical entity is named post-finasteride syndrome (PFS).<sup>8</sup> Although, the prevalence of the PFS is not exactly determined, the number of men reporting these persistent sexual side effects to health professionals is increasing worldwide. The symptomatology of PFS is quite variable and the symptoms may range from minor to severe. In addition to the aforementioned sexual side effects, the PFS patients may report psychological issues such as emotional sensitivity, attention deficiency depression, panic attacks and anxiety leading to functional decline and even suicidal ideation. Other physical symptoms of PFS include muscle atrophy, dry and thin skin, chronic fatigue, tinnitus, gynecomastia, scrotal and penile shrinkage and the Peyronie's disease

Today, there is no known cure or any effective treatments of PFS; however, medical communities and societies are recently beginning to realize the scope and burden of this problem.<sup>4</sup> Until the actual pathophysiology of PFS is determined and effective therapies are discovered, we all have to think twice before prescribing a 5ARIs for our patients with either BPH and/or AGA. Meanwhile, professional organizations may provide educational materials for physicians in order to increase their awareness regarding the scope of these persistent catastrophic adverse effects of finasteride and dutasteride. Considering the thousands of sufferers who already have PFS, the scientific world immediately need to conduct more research to determine how to effectively treat this horrible symptom complex.

### CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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