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Context: Millions of men worldwide illicitly use anabolic-androgenic steroids (AAS) for muscle growth. However, AAS can cause death, cardiomyopathy, stroke, and psychosis. AAS use suppresses endogenous testosterone secretion for several months following cessation. Therefore, AAS cessation causes tiredness, low mood, insomnia, absent sexual function, and suicidality. There is currently no treatment recommended to reduce symptoms when men stop AAS. Some men empirically self-administer post-cycle therapy (PCT) drugs such as human chorionic gonadotrophin (hCG), selective oestrogen receptor modulators (SERM) and aromatase inhibitors (AI), aiming to restore endogenous testosterone. hCG directly stimulates endogenous testosterone production, while SERMs and AIs reduce the oestrogenic negative feedback on gonadotrophin secretion. Currently evidence is lacking to support the use of PCT in AAS-induced hypogonadism. **Methods:** Clinical audit from a single addiction service clinic, of 613 men stopping AAS in Scotland between 2015-2022. Men attended for a single, non-fasting, random blood test performed within 12 months of AAS cessation, with or without PCT use. Primary endpoint was the combination of reference range levels of serum LH, serum FSH and total testosterone, as a surrogate marker of biochemical recovery from hypogonadism. **Results:** PCT use was reported by 76% of men. Men using PCT had a significantly higher serum total testosterone following AAS cessation compared to men who did not (mean total testosterone nmol/L: 11.3 ± 6.7, no PCT; 12.8 ± 7.6, PCT; P=0.024). PCT use was associated with a higher probability (223/466, 48%, PCT; 56/147; 38%, no-PCT; P=0.04), and shorter time interval between stopping AAS and blood test of normalised reproductive hormones (13.3 ± 8.8 weeks, PCT;18.7 ± 12.0 weeks, no-PCT; P<0.01). The odds of biochemical normalisation during multivariable analysis were statistically significant when: (1) PCT was used (P=0.01); (2) fewer AAS were used (P=0.003); (3) shorter time of AAS use (P=0.02); (4) AAS used stopped for a longer time (P=0.03). **Discussion:** Our data provide primary evidence that self-administered PCT drugs may be associated with improved biochemical recovery from AAS-induced hypogonadism. These data require corroboration within an interventional study to determine causality. Nevertheless, these data may have important therapeutic implications for the future treatment of men who are motivated to stop AAS.

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Self-administration Of Post-cycle Therapy Is Associated With Increased Probability Of Subsequent Normalisation Of Reproductive Hormones Following Anabolic-androgenic Steroid Cessation In Men

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