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Context: Anabolic-androgenic steroids (AAS) are misused by millions of men worldwide to boost muscle size and physical performance. Recent studies have quantified the recovery of cardiovascular markers and testicular function following AAS cessation. Qualitative studies demonstrate that low mood, anxiety, suicidal ideation, and sexual dysfunction are also common following AAS cessation. However, no previous study has focused on quantifying symptoms within the first year of AAS cessation, nor investigated independently associated factors for these symptoms. **Methods:** Cross-sectional, observational study of 165 men in 3 groups; non-AAS (n=43); current-AAS (n=76); past-AAS ≤ 1 year (n=46). All participants completed questions on substance misuse, Beck Depression Inventory-II (BDI-II), International Index Erectile Function-15 (IIEF-15), General Anxiety Disorder (GAD-7), Quality-of-life (SF-36), and underwent fasting, morning blood sampling with urine toxicology. **Results:** As expected, current-AAS had lower gonadotropins and elevated serum total testosterone compared with past-AAS and non-AAS. Sexual function measured using IIEF-15 was impaired in men stopping AAS < 1 year (past-AAS) compared with current AAS users: (1) total: 69.0 [95% CI 64.0, 71.0], current-AAS; 61.0 [95% CI 56.0, 66.0], past-AAS; $p=0.077$; (2) erectile function: 30.0 [95% CI 29.0, 30.0], current-AAS; 28 [95% CI 21.0, 29.0], past-AAS; $p=0.015$; (3) sexual desire: 9.0 [95% CI 8.0, 10.0], current-AAS; 6.0 [95% CI 5.0, 8.0], past-AAS; $p<0.0001$; (4) overall satisfaction: 10.0 [95% CI 8.0, 10.0], current-AAS; 7.0 [95% CI 7.0, 8.0], past-AAS; $p=0.002$. Multivariable analysis suggested that psychiatric comorbidity (coefficient -6.5 [95% CI -13.0, -1.3] $p=0.03$) and AAS cessation (coefficient -10.8 [95% CI -5.6, -17.2]; $p<0.001$) were associated with lower total IIEF-15 scores. Depression scoring was worse in the past-AAS group compared with non-AAS: BDI-II 4.0 [95% CI 2.0, 7.0], non-AAS; 7.0 [95% CI 4.0, 16.0], past-AAS; $p=0.0448$. Multivariable analysis suggested that psychiatric comorbidity (OR 2.39 [95% CI 1.60, 3.57]; $p<0.001$) and lower serum total testosterone (OR 0.85 [95% CI 0.88, 0.94]; $p=0.002$) were associated with higher BDI-II scores. Energy and fatigue measured using SF-36 was lower in the past-AAS group compared with non-AAS: 70 [95% CI 65, 75], non-AAS; 60 [95% CI 50, 65], past-AAS; $p=0.0498$. No significant differences in anxiety scoring were detected. **Discussion:** We report the first, detailed quantification and modelling of symptoms in men currently misusing and stopped AAS within the previous year. These data reveal potentially treatable factors to improve symptoms of AAS cessation if proven within interventional studies.

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Modelling the Factors Associated With Sexual and Mood Symptoms Within the First Year of Anabolic-Androgenic Steroid Cessation in Men

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