

The Relationship between Serum Testosterone Levels and the Prevalence of Kidney Stones in Men

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DESCRIPTION

There is a consistent male majority among urinary stone formers, with males having a two to three times greater prevalence than females. Based on the gender disparities revealed in the ecological data, testosterone appears to be the primary culprit. Several small human investigations have also found greater levels of testosterone in stone-forming males than in a control group. Meanwhile, castration has been shown to drastically lower the incidence of stone formation in stone-induced ethylene glycol-fed rat models. Despite this, the link between serum testosterone and urolithiasis in males remains debatable. First, it is more difficult to relate these findings to clinically significant associations between testosterone and urolithiasis because the associations were established primarily in small populations and those studies did not strictly control for confounding factors associated with testosterone and urolithiasis, such as obesity, hypertension, cardiovascular disease, diabetes, and so on. Second, numerous studies have reported a link between low blood testosterone levels and a greater prevalence of urolithiasis or no relationship. Based on a diagnosis of hypogonadism in males, testosterone levels are classified as low (300 ng/dl), normal (>300 ng/dl and 1,000 ng/dl), and high (1,000 ng/dl). It examined the association between testosterone and the occurrence of kidney stones in males from 2013 to 2016, utilizing data from the National Health and Nutrition Examination Survey (NHANES) database, and found no link between testosterone and kidney stones. However, analysing the association between kidney stone occurrence and the large range of 300-1,000 ng/dl as the normal testosterone population may conceal the underlying relationship. Third, metabolic syndrome and osteoporosis are known to be associated with a high prevalence of stone formation and low testosterone levels, contradicting the widely held belief that high testosterone levels can greatly accelerate stone formation. Fourth, as lifestyle-related risk factors improve, men's vulnerability to urinary stones appears to be steadily reducing in comparison to women. A research, for example, found that the male: female ratio of nephrolithiasis prevalence decreased from 1.7:1 in 1997 to 1.3:1 in 2002. To completely investigate the association between

serum testosterone and kidney stone prevalence in males, a large, representative cross-sectional investigation is required. Thus, the purpose of this study was to look into the relationship between serum testosterone and kidney stone prevalence utilizing representative data from the NHANES 2011-2016.

Variable definitions and data collection

The dependent variable was kidney stones, which were defined by self-response to the question "Have you ever experienced a kidney stone?" on a standardized questionnaire. In the 2011-2012, 2013-2014, and 2015-2016 NHANES research cycles, serum total testosterone was determined using isotope dilution liquid chromatography-tandem mass spectrometry. Previous research on factors influencing serum testosterone and the incidence of kidney stones included age, race, education, Body Mass Index (BMI), hypertension, diabetes, asthma, gout, coronary heart disease, arthritis, angina, heart attack, stroke, smoking, serum total cholesterol, triglycerides, calcium, and uric acid as covariates.

CONCLUSION

Mexican-Americans, non-Hispanic whites, non-Hispanic blacks, and Other/multicultural were the racial categories. Education was classified into three levels based on completed years of schooling: 8 years, 9-12 years, and 12 years. Obesity was defined as a BMI of 30 or greater, computed as the weight in kilogram's divided by the height in meters squared. The self-reported replies to questions about whether a doctor had ever advised the respondent that they had the specified disorders yielded a history of gout and hypertension. If a participant replied "Yes" to the question "Have you smoked at least 100 cigarettes in your entire life?" they were regarded to have a smoking history. A diabetes history was determined by a self-report response to the question, "Other than during pregnancy, have ever been told by a doctor or health professional that had diabetes or sugar diabetes?" The Standard Biochemistry Profile was used to get serum total cholesterol, triglycerides, calcium, and uric acid.

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