

# Testosterone Tx Cut Mortality in Type 2 Men

## VITALS

**Major Finding:** In men with type 2 diabetes, mortality was significantly higher in those with untreated low testosterone (20%) than in those with either normal testosterone (9%) or treated low testosterone (8.6%).

**Data Source:** 580 men with type 2 diabetes who had total testosterone evaluated during 2002-2004 and were followed for about 6 years.

**Disclosures:** Dr. Jones had no relevant disclosures.

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FROM ENDOCRINE ABSTRACTS

**T**estosterone replacement therapy is associated with lowered mortality in men with type 2 diabetes and low testosterone levels, according to U.K. investigators.

In a study of 578 men with type 2 diabetes whose testos-

terone was measured during 2002-2004 and who were followed for 6 years, 36 of 182 diabetic men with untreated low testosterone (20%) died during the study period, compared with 31 of the 338 men (9%) with normal testosterone levels.

Meanwhile, 5 of the 58 diabetic men (8.6%) who were giv-

en testosterone replacement therapy died during the study, putting their mortality risk on par with diabetic men with normal testosterone levels (Endocr. Abstracts 2011;25:P163).

Lead investigator Dr. T. Hugh Jones of Barnsley Hospital NHS Foundation Trust and the University of Sheffield (U.K.) said in an interview that although a prospective, long-term study was still needed, the mortality difference shown in this retrospective study was "quite dramatic." The vast majority of deaths were from cardiovascular disease, Dr. Jones said, adding that this was to be expected with any diabetes mellitus population.

The mean age of the study subjects was 61 years, and the subjects were well matched, Dr. Jones and colleagues wrote. Survival was significantly decreased in patients with low testosterone who did not have replacement therapy, compared with those with normal

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testosterone levels. The treated group had significantly improved survival. In a Cox regression model adjusted for age, weight, hemoglobin A<sub>1c</sub>, preexisting cardiovascular disease, smoking, and use of statins, ACE inhibitors, and angiotensin receptor blockers, the hazard ratio for all-cause mortality was 2.2 in participants with untreated low total testosterone, they wrote.

While the method and amount of testosterone replacement was not standardized in the study, the investigators treated each man to his normal physiologic range and not higher, Dr. Jones said. Overly high levels of testosterone replacement, he said, have been associated in the past with elevated cardiovascular risk.

Testosterone has been shown to have a range of biological actions, including anti-inflammatory effects, and Dr. Jones has in recent years investigated the role of testosterone in diabetes. Last year, Dr. Jones and his colleagues published evidence that low testosterone increases diabetes mortality risk in men; more recently, he and other investigators have looked at the broader effects of testosterone replacement therapy in diabetic men.

In a separate, randomized study by Dr. Jones and his colleagues in 220 hypogonadal men with type 2 diabetes and/or metabolic syndrome, use of a transdermal testosterone-replacement patch was associated with beneficial effects on insulin resistance, total and LDL cholesterol, lipoprotein A, and sexual health (Diabetes Care 2011;34:828-37).



**It's important to recognize and screen for microvascular complications in patients with type 2 diabetes as early as possible.<sup>7</sup> Effective management of diabetes can help prevent or slow the progression of microvascular complications.**