# Testosterone Patch Helped Men With Alzheimer's

BY MARY ANN MOON
*Contributing Writer*

Testosterone replacement improved the quality of life for men with Alzheimer's disease and low serum testosterone levels in a small preliminary study, reported Po H. Lu, Psy.D., and associates at the University of California, Los Angeles, David Geffen School of Medicine.

Testosterone therapy has been shown to improve mood, muscle mass, strength, bone density, libido, and certain cognitive functions in hypogonadal men who are otherwise healthy, but this is the first study to report that testosterone may exert positive effects in Alzheimer's disease (AD), the researchers said (Arch. Neurol. 2006;63:1-9).

They assessed testosterone's effects on a variety of cognitive, behavioral, mood, and quality of life (QOL) measures in 16 men with mild to moderate AD and 22 healthy elderly men who served as control subjects. The study subjects were randomly assigned to apply either testosterone patches (7 patients and 10 controls) or placebo patches (9 patients and 12 controls) every day for 6 months. Five of the AD patients and six of the control subjects were hypogonadal at baseline, with serum testosterone levels below 298 ng/dL.

As a group, the AD patients who received testosterone showed a significantly better QOL, as assessed by their caregivers using the 13-item Quality of Life–Alzheimer's Disease scale, than AD patients who received placebo. This effect occurred because the testosterone recipients showed a nonsignificant trend toward improved QOL over the 6-month study period, while the placebo group showed significant declines.

Similarly, the AD patients who received testosterone showed either greater improvement or less decline in three measures of visual-spatial cognitive functioning, compared with the AD placebo group and the control groups.

Two AD patients and four control subjects withdrew from the study because of adverse effects, including skin rash at the testosterone patch application site.

These results are encouraging, but they "do not warrant routine treatment" with testosterone until further studies with larger sample sizes verify the findings, the investigators noted. ■

# Testosterone Levels High in SIDS Infants

Abnormally high testosterone levels may play a part in sudden infant death syndrome, Michael Emery, Ph.D., and colleagues reported.

Their postmortem serum analyses of SIDS infants showed that testosterone levels in some males were comparable to the highest levels reported in living infants (preterm males), and the levels for some SIDS females were more than twice as high as any previously reported levels for any living female infants.

Identifying a link between causality and elevated testosterone will take more study, said Dr. Emery of the University of Miami. But since the hormone decreases ventilation and ventilatory drive during sleep in adults, the researchers postulate a link between hormonal pulses, neuronal excitability, and cardiorespiratory control (J. Pediatr. 2005;147:596-91).

The researchers examined postmortem serum testosterone and estradiol in 127 SIDS infants and 42 control infants who had died unexpectedly, but of known causes. Both male and female controls were significantly older than SIDS infants (males, 155 days vs. 97 days; females, 134 days vs. 86 days).

Testosterone levels were significantly higher in SIDS males, compared with control males (4.8 nmol vs. 2.2 nmol) and in SIDS females, compared with control females (2.4 nmol vs. 1.6 nmol). Estradiol levels did not differ between controls and SIDS infants. Testosterone levels decreased significantly with infant age among male and female SIDS infants but remained steady with age among controls. The difference in testosterone levels between the groups remained significant even when preterm infants (three SIDS and seven controls) were excluded.

**—Michele G. Sullivan**