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**File: ■ Tongkat Ali (*Eurycoma longifolia*)**

- Hypogonadism
- Testosterone
- Erectile Dysfunction

HC 071165-436

**Date: November 15, 2011**

**RE: Tongkat Ali Aqueous Extract Shows Promise in Study for Men Who Are Symptomatic of Hypogonadism Due to Low Testosterone**

Tambi MIBM, Imran MK, Henkel RR. Standardised water-soluble extract of *Eurycoma longifolia*, Tongkat ali, as testosterone booster for managing men with late-onset hypogonadism? *Andrologia*. June 15, 2011; [epub ahead of print]. doi: 10.1111/j.1439-0272.2011.01168.x.

Tongkat ali (*Eurycoma longifolia*) is used as an adaptogen in Malaysia and other regions of Southeast Asia. Water extracts of the roots are also used traditionally for energy, vitality, and as an aphrodisiac. Eurypeptides, polypeptides found in the root aqueous extract, have been shown to stimulate the production of androgens, and numerous in vivo studies support the aphrodisiac and testosterone-stimulating effects of the root extract. However, research into the effects of Tongkat ali root extract on humans is limited. Thus, this clinical study investigates for the first time whether a water-soluble extract of Tongkat ali can improve testosterone output and symptoms in men with late-onset hypogonadism (LOH).

Patients with hypogonadism (an abnormal decrease in testosterone production) and LOH were recruited from the Wellman Clinic at Damai Service Hospital in Kuala Lumpur, Malaysia and were classified using the Aging Males' Symptoms (AMS) rating scale in addition to serum testosterone levels. The AMS score consisted of the ratings of 17-26 for no complaints, 27-36 for few complaints, 37-49 for mild complaints, and 50 or above for severe complaints. Similarly, serum testosterone levels were categorized as a normal range of 6-30.0 nM or a low range of <5.99 nM.

Treatments consisted of 1 month of 2 capsules per day containing 100 mg each of standardized, water-soluble patented extract of Tongkat ali. Extract material was provided by Phytes Bioteks, Biotropics Malaysia Berhad, Malaysia. After 1 month, AMS scores and serum testosterone levels were again obtained from those patients that completed the full course of treatment.

Of the original 320 patients that qualified for the study, 64 Malaysian, 9 Indian, and 3 Chinese (n=76) patients (age range=28-70 years; median age=51), completed the study. No differences in responses were detected based on ethnicity. Significant correlations between age, AMS scores, and serum testosterone levels were observed both before and after the study with a significant correlation noted between AMS score and testosterone (P<0.0001). The AMS score significantly decreased after 1 month of treatment from  $38.05 \pm 9.25$  to  $23.67 \pm 5.11$  (P<0.0001). Also, the serum testosterone levels increased from  $5.66 \pm 1.52$  nM to  $8.31 \pm 2.47$  nM (P<0.0001). Furthermore, 8 patients reported no complaints in the AMS score prior to treatment, while 54 reported no complaints after 1 month of treatment (P<0.0001). Similarly, normal serum testosterone levels were only observed in 27 patients at baseline as opposed to 69 (90.8%) patients after 1 month of treatment (P<0.0001).

The Tongkat ali extract used in this study did improve LOH as measured by a significant decrease in AMS score and increase in serum testosterone levels. It is suggested that the euryptides found previously in Tongkat ali root extract may contribute to the activity observed. Despite the results presented in this study, no placebo or parallel control group was used, and no evidence was provided of the standardization or euryptide content of the extract. Additionally, while the root extract is used traditionally and in animal studies, no information is given about which part of Tongkat ali was extracted and provided for this study. There was also no mention about possible or reported adverse effects associated with the use of preparations of this plant.

Despite these weaknesses, this study demonstrates that Tongkat ali is potentially a useful herbal treatment for those suffering from LOH. The use of this plant may be especially practical in developing countries such as Malaysia, where it is widely available and may be more affordable than other medications. As this study is an initial investigation into the potential therapeutic activity of Tongkat ali in treating LOH, it supports future rigorous clinical trials of well-characterized extracts of this plant.

—Amy C. Keller, PhD

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