

**Abstract [199 words]**

To determine the clinical characteristics of low androgen status in adult males with diabetes, we retrospectively analyzed the medical records of patients with type 2 diabetes mellitus in whom serum free testosterone (FT) levels were examined for 1 year. Among the 46 patients ( $56 \pm 1.5$  years old), decreases in serum FT levels to  $<8.5$  pg/ml (indicating the occurrence of late-onset hypogonadism [LOH]) were detected in 18 (39%). The percentages of patients with low FT levels were high in the  $\geq 50$  years age group (83%), the HbA1c  $<7\%$  group (67%), and the  $25 \leq \text{BMI} < 30$  kg/m<sup>2</sup> group (56%). The serum FT levels tended to decrease age-dependently. The level of HbA1c was significantly correlated with the Heinemann Aging Male Symptoms (AMS) score ( $R=0.47$ ). The low-FT group had decreased levels of hemoglobin. Of note, the serum FSH level ( $R= -0.32$ ) was negatively correlated with the serum FT level, whereas the serum TSH level ( $R=0.36$ ) was positively correlated with the serum FT level. Collectively, these results revealed that many diabetic males may have low FT levels and that the AMS score is related to the HbA1c level. A slightly anemic condition, thyroid dysfunction, and obesity (class I) might be involved in LOH in middle-aged diabetic males.

**Key words:** androgen, diabetes mellitus, late-onset hypogonadism, testosterone,  
thyroid function