Effect of Long-term Alcohol Abuse on Male Sexual Function and Serum Gonadal Hormone Levels

B. GÜMÜŞ,* M. R. YİĞİTOĞLU,** M. LEKILI,* B. S. UYANIK,**
T. MÜEZZINOĞLU,* C. BÜYÜKSU*

Departments of *Urology and **Biochemistry, Celal Bayar University,
School of Medicine, Manisa, Turkey

(Accepted November 2, 1998)

Purpose: The relationship between chronic alcohol abuse and male sexual
dysfunction and pituitary gonadal function abnormalities remains uncertain. The
purpose of this study was to assess the effect of chronic alcoholism on sexual func-
tions and serum hormone levels.

Materials and methods: Forty-five chronically alcoholic men and a control
group of thirty healthy non-alcoholic volunteers were enrolled in the study. Each of
the men in the study and control group were interviewed according to a sexual dys-
function questionnaire by an urologist. Blood samples were collected for evaluation
of hormone levels. Sera were stored at −70°C for analysis.

Results: The sexual desire and erection scores of alcoholic men were not
statistically different from those of the control group. Fourteen out of the 45 alco-
holic men complained of loss of erection during sexual activity. No significant
difference in hormone levels between groups was found except for FSH.

Conclusion: In the absence of hepatic and gonadal failure in chronically
alcoholic men, there is no significant difference in serum hormonal levels, sexual
dysfunction form, and sexual functions between alcoholics and normal healthy non-
alcoholic men.

Introduction

Sexual disorders have frequently been reported in men who are long-term
alcohol users, with prevalence estimates ranging from 8% to 58% [1]. Lemere
and Smith reported that 8% of 17,000 patients treated for alcoholism had im-
potence [2]. The reported prevalence of lack of sexual desire ranges from 31%
to 58% of subjects using alcohol long-term [3, 4]. Data on the prevalence and
nature of sexual disorders in chronically alcoholic men is reviewed by Schiavi
[1]. He considers hormonal, neurologic and psychologic factors that may con-
tribute to the development and maintenance of their sexual problems. Van Thiel
et al. and Bannister et al. have reported that chronic alcoholism has a deleteri-
ous effect on hypothalamic–pituitary and testicular function. Ethanol can have
direct toxic effect on the testes with a resulting decrease in testosterone
secretion [5, 6]. However, remarkably little is known about the relationships
between sexual function or dysfunction and gonadotropins, testosterone and
prolactin [5]. The nature of the organic processes that mediate the chronic ef-
Effect of alcohol on sexual function is not known but they are likely to include the hormonal mechanism [1]. Evidence for a direct link between pituitary–gonadal abnormalities and sexual dysfunction is almost nonexistent [1, 5]. For this reason, we aimed to investigate the effect of long-term alcohol use on serum gonadotropin, testosterone and prolactin levels and sexual functions.

Materials and methods

Forty-five chronically alcoholic men and 30 healthy non-alcoholic volunteers as controls were studied. Criteria for the inclusion as alcoholic subjects were (1) age 25–65 years, (2) a diagnosis of alcohol dependence, (3) being married or living in a sexual relationship with a female partner, (4) not having any psychological disorder other than alcoholism, and (5) long-term alcohol use for at least 5 years.

Patients who had obesity (body mass index [BMI] >30 kg/m²) were excluded from the study. None had medical illness and were receiving no medication that was likely to impair sexual function. As to sexual dysfunction form, erection quality and sexual desire were evaluated in three classes: (1) poor (< 5 score); (2) moderate (5–7 scores) and (3) good (8–10 scores) [7].

Blood samples were drawn in triplicate in each 15-minute sample. Sera were stored at −70 °C until analysis. Hormone levels were measured by chemiluminescent immunoassay methods with a hormone autoanalyzer (DPC-Immulite, Los Angeles, USA). Intraassay variabilities for total testosterone (TT), prolactin (PRL), follicle stimulating hormone (FSH) and luteinizing hormone (LH) were 6.1%, 6.3%, 5.2% and 4.1%, respectively.

The unpaired Student t-test was used for statistical evaluation. Difference at 5% level (p<0.05) was accepted as significant.

Results

Sexual data on the alcoholics and controls are summarized in Table 1. Sexual desire and erection scores were lower in alcoholic men than in the controls, but this was not statistically significant. Also, there were no significant differences in terms of other sexual data between patient and control groups, except loss of erections during intercourse. Fourteen patients had loss of erection during intercourse, but only 2 of the controls had it (p<0.05). Twenty patients were alcoholics with very long-term (>30 years) alcohol use, 11 of 45 patients had worse sexual desire and loss of erection during intercourse (data not shown). Table 2 illustrates the mean values for serum TT (normal range 3–10 ng/ml), LH (normal range 1.4–7.7 mIU/ml), FSH (normal range 1.5–14.0 mIU/ml), oestradiol (E₂) (normal range ND-56 pg/ml), PRL (normal range 2.5–17.0 ng/ml) and prostate specific antigen (PSA) (normal range 0.02–4.00 ng/ml). No significant difference was found between groups except for FSH,