

## Higher Herpes Zoster Infection Frequency in Right-handed Patients and More Frequent Appearance in the Left Body Side of Females

Sir,

Herpes zoster is a common viral infection of the nervous system. Usually a single, unilateral dermatome is involved. It is not known why involvement is unilateral. The sexes are equally affected. Battcock et al. (1) observed an apparent decrease in the number of left-handed subjects and found that a reduced percentage of left-handed subjects was found in a group of patients with shingles (3.0%), compared with a control group (8.9%). In this study, the effects of sex and handedness on incidence of herpes zoster and on lateralization of lesions were investigated.

### MATERIAL AND METHODS

The study was carried out in 24 male and 26 female patients, diagnosed as having herpes zoster, who in 1995 attended the dermatology clinics of the Medical Faculty Hospital of Atatürk University. Four hundred and three healthy subjects were used as controls. The patients ranged in age from 6–75 years, (average 39.03 years). The study was made prospectively.

Hand preference of patients and controls was assessed by the Edinburgh Handedness Inventory (2). Subjects having Geschwind scores (GSs) lower than or equal to zero were considered to be left-handed and those having GSs greater than zero were considered to be right-handed (3). For statistical evaluation, a proportion test was used in a Microsta packed program, and test ( $Z$ ) and probability ( $p$ ) values were assessed. Probability ( $p$ ) values lower than 0.05 were considered to be meaningful.

### RESULTS

There was no significant male-female difference in terms of herpes zoster incidence ( $Z=0.14$ ,  $p>0.05$ ). Four percent of the 50 patients and 14% of the controls were left-handed. The rate of left-handedness as statistically significantly lower in patients with herpes zoster than in controls ( $Z=1.99$ ,  $p<0.05$ ). Sixty-two percent of the patients had lesions on the left side of the body, and the difference between the sides was statistically significant ( $Z=1.75$ ,  $p<0.05$ ). The lesions were on the right side of the body in 15% of the female patients and 54% of the male patients. The difference between right and left sides was statistically significant for women ( $Z=4.99$ ,  $p<0.001$ ), but not for men ( $Z=0.39$ ,  $p>0.05$ ).

### DISCUSSION

The findings of our study are compatible with those of an earlier report (1). Geschwind & Behan reported a higher frequency of certain auto-immune diseases in left-handed

subjects (4). This could be because left-handers might have a more active, and effective, immune system (1). Therefore, it can be speculated that handedness, i.e. cerebral lateralization, is associated with the incidence of herpes zoster infection.

The right-left difference in females as to the localization of herpes zoster lesions may be due to a factor associated with females. Annett (5) hypothesized that there is a right-shift factor, which causes right-handedness in humans. Tan & Kutlu (6) suggested that a female right-shift factor would be responsible for a tendency towards the right-hand and right-paw preferences. Furthermore, Kramer et al. (7) reported that breast cancer occurs more frequently on the left side in females. Sexual differences in handedness, cognitive abilities, developmental disorders, and cerebral asymmetry suggest that intrauterine exposure to gonadal hormones may be important (8), and experimental studies have shown direct effects of testosterone and oestrogens on the central nervous system development (9).

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