

SUMMARY

The study was aimed to demonstrate the muscle properties such as the mean fibre number, mean fibre diameter and mean fibre area in relation to muscle weight, body weight and age in three different upper forelimbs muscles from both sexes of normal mice at same age. Forelimb muscles are accountable for movements and preservation of body frame. The experiments were performed on male and female albino mice. All muscles studied of the forelimbs were separated and eliminated for further experiment. The muscles crosswise sections taken from the mid belly regions were studied. The difference of mean fibre number, mean fibre diameter and mean fibre cross section area were significant between all studied forelimb muscles (triceps, biceps and epitrochlearis) in both sexes of mice. The mean values of fibre number, fibre diameter and cross sectional area in triceps, biceps and epitrochlearis muscles of male mice was higher by approximately 21%, 14%, 8%, 1%, 12%, 23%, 16%, 1% and 18% in comparison with female mice respectively. The mean fibre number in triceps, biceps and epitrochlearis muscle was highly significantly different in both genders. Gender difference for mean values of diameter and cross sectional area for triceps, biceps and epitrochlearis was not significant. It was revealed that mean number of fibres in triceps, biceps and epitrochlearis muscles have no relation with age, body weight and muscle weight of mice, in both genders of mice. The total fibre number in muscles studied was found to remain constant throughout the animal's life. It was noted that the mean fibre diameter and mean cross sectional area for the three muscles studied (triceps, biceps and epitrochlearis) were found to increase with increase in age, weight of body and weight of muscle of mice in a curvilinear manner in both genders. Data for muscles and body weights were also presented. The body weight and muscles weight (triceps, biceps and epitrochlearis) of male mice was approximately 10% greater than of female mice. The ratios of muscle (triceps, biceps and epitrochlearis) weight to male mice body weight were higher than in female mice. Weight differences among muscles studied were 79% and 84% higher in triceps muscle than in biceps and epitrochlearis muscles. Weight of biceps muscle was 22% higher as compared to epitrochlearis muscle weight. Mean values of all studied morphometric properties were observed higher in triceps than in biceps and epitrochlearis muscles. By considering the functions of the three forelimb muscles studied, it seems

reasonable to postulate that any subsequent increase in muscle weight, muscle fibre size etc., is dependent on the work load per muscle. As the functions of triceps muscle is more as compared to other upper forelimb muscles (biceps and epitrochlearis), so mean values of all studied morphometric properties presumably higher in triceps than for other muscles studied. Moreover, mean values of all morphometric properties studied, higher in male mice than that to female mice depending on the work load per sex.