Short Communication

The relation between ageing and increasing pulse pressure in upper and lower limbs

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Abstract

Background & Objective: Pulse pressure is a marker of arterial stiffness. In old age the pressure wave reflection also contribute to disparity of pulse pressure between upper and lower limbs. This study was done to determine the relation between ageing and increased pulse pressure of upper and lower limbs.

Materials & Methods: In this discriptive study blood pressure measured in 40 nonsmoker men, all free from medication and disease history, insubjects divided in two groups: 18-25 and 50-70 years old; with mean age of 22±1.3 and 59±2 years respectively. Using a mercury-column sphygmomanometer (ERKA) with appropriate cuff size and after five minutes of quiet rest, the blood pressure was determined in supine posture at three separate times. The lower limb pressure was measured with placing the cuff on calf muscle and the stethoscope on posterior surface of internal malleolus. The mean of the second and third records rounded and were used for analysis.

Results: The right and left brachial and ankles pulse pressure in two groups were: 44.50±2.03, 44.50±1.71, 37.90±2.24, 37.25±2.30 mmHg in 18-25 years old group; and 47.10±2.74, 46.90±2.65, 56.05±3.18, 55.90±4.48 mmHg in 50-70 years old group, respectively. Significant differences were found between brachial and ankle pulse pressure in both sides in first group, (P<0.05). In the second group this difference was only significant at right, (P<0.05). The ratio of brachial pulse pressure to ankle pulse pressure in 18-25 years old group was greater than 1 and in 50-70 years old group it was less than .15; In both side the ankles pulse pressure was significantly greater in 50-70 years old group (P<0.05).

Conclusion: This study showed that in subjects of more than 55 years of age, the increasing of pulse pressure was more prominent in lower limb. The ankle pulse pressure may be a proper index of central pulse pressure changes and atherosclerosis of elastic arteries with ageing.

Key Words: Pulse pressure, Ageing, Ankle

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