

Age-Related Changes of Calcium in the Coronary Arteries of Thai, Japanese and Monkeys

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ABSTRACT

To examine whether there were differences between different races and between different species in regard to age-related changes of elements in the coronary arteries, the authors investigated age-related changes of Ca in the left coronary arteries of Thai, Japanese and monkeys by direct chemical analysis. After ordinary dissections at Chiang Mai University and Nara Medical University were finished, the left coronary arteries were resected from the subjects. The anterior interventricular branch was used as the left coronary artery. The anterior interventricular branches were also resected from rhesus and Japanese monkeys, bred at Primate Research Institute, Kyoto University. After ashing of the arteries with nitric acid and perchloric acid, the Ca content was determined by inductively-coupled plasma-atomic emission spectrometry. In the left coronary arteries of Thai, the average content of Ca increased progressively from the forties to the seventies. In the left coronary arteries of Japanese, the average content of Ca increased remarkably in the seventies and thereafter increased in the nineties. The average content of Ca in the seventies was two times higher in the left coronary arteries of Thai than in those of Japanese. The Ca accumulation in the left coronary arteries of Thai occurred at least 10 years earlier in comparison with Japanese. In contrast, the Ca accumulation hardly occurred in the left coronary arteries of rhesus and Japanese monkeys at old age.

Key words: Coronary artery, Atherosclerosis, Calcium, Aging, Human, Monkey