Prognosis after cardiac events due to hypertrophic cardiomyopathy under school supervision in AED era

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Background: The most common cause of sudden death under school management is cardiac accident in Japan. Among them, the ratio of cardiomyopathy in recent years is somewhat increasing trend, and most cardiomyopathy is hypertrophic cardiomyopathy (HCM). The aim of this study is to examine the recent occurrence of cardiac accident due to HCM and effect of automated external defibrillator (AED) under school management.

Methods: We retrospectively studied cases with cardiac accident under school management between 2004 and 2011.

Results: The total number of cardiac accident in this study period was 218 cases. Among them, 29 cases had suddenly died for HCM. 15 cases had been successfully survived resuscitation. Survivor did not exist until 2006. All survival cases except a case implanted implantable cardioverter defibrillator (ICD) were used AED. Both death cases and survival cases were often in boys than girls. Although death cases observed not only junior high and high school students but also kindergarten students and elementary school students, survival cases were only junior high and high school students. Percentage of cases who had been diagnosed was 48% (death cases) and 20% (survival cases). Occurrence of cardiac accidents during exercise was most in both death cases and survival cases.

Conclusion: Because the general public has been able to use AED, cardiac arrest cases due to HCM under school management could be survival since 2007 in Japan. AED and ICD were important to prevent cardiac sudden death.