Objectives: Holter monitoring (HM) is usually used in patients with syncope when etiology cannot be explained with history, physical examination and electrocardiography (ECG). Our objective was to evaluate the diagnostic value of Holter monitoring in children with syncope.

Patients and Methods: Databases were collected retrospectively by analyzing the HM results of 3122 pediatric patients between 2010–2014. Gender, age at initial syncope, detailed clinical history, physical examination, 12-lead electrocardiographic and echocardiographic results were noted using standardized form.

Results: The study included 323 patients with syncope with a mean age of 13.21±3.67. There were 199 female and 124 male patients. Among all patients 284 (87.9%) had normal HM results while there were 11 (3.4%) abnormal holter studies considered to explain syncope. Three of these patients with abnormal HM results explaining syncope had already been diagnosed with previous ECG. Hence, overall diagnostic value of the Holter examination was low as 2.4%. In contrast, diagnostic value of HM results in patients with positive family history was found as 16.6%. In our study, 7 patients considered as long QT syndrome according to HM findings although the ECG revealed normal QT measurements.

Conclusions: Detailed history have a great value in children with syncope. Holter monitoring was determined to be unnecessary in patients without high risk and its diagnostic value was considered as low among these patients while it could be used for concealed long QT syndrome especially if the syncope was associated with positive family history and exercise related syncope even with normal basal ECG findings.