Comparison of the clinical backgrounds and Electrocardiographic findings of fulminant and non-fulminant groups in patients with myocarditis

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**Introduction**: Myocarditis is a fatal disease, and the mortality is high in fulminant cases.

**Methods**: There were 38 patients who were admitted to our hospital with a diagnosis of myocarditis from January 2012 to February 2018. We divided patients into fulminant (N = 10) and non-fulminant groups (N = 28), and retrospectively examined the clinical backgrounds, Electrocardiographic findings and outcomes. We defined fulminant as a case requiring mechanical support circulation.

**Result**: The mean age was 45.8 ± 23.9 years, and 55.3% of patients were male. The causative disease was viral in 84.2% of cases and eosinophil in 7.9%. As for the patient background, women were more frequent in the fulminant group, but there was no significant difference (70.0% vs. 35.7%, p = 0.08). In electrocardiographic findings on admission, complete right leg blocks and complete leg blocks tended to be more common in the fulminant group, but there was no significant difference (30.0% vs. 7.1%, p = 0.10, 40.0% vs. 10.7%, p = 0.06). The pulse rate was significantly faster in the fulminant group (123 ± 46 bpm vs. 86 ± 24 bpm, p = 0.002), and the QRS width was significantly wider in the fulminant group (144 ± 75.6 ms vs. 104 ± 21.2 ms, p = 0.02). There were 3 cases of ventricular tachycardia during hospitalization only in the fulminant group. In blood test findings on admission, CK and CK-MB at admission were significantly higher in the fulminant group, and CRP, CK and CK-MB in Peak were also significantly higher in the fulminant group. In the fulminant group there were 7 cases of IABP, 4 cases of PCPS, 1 case of Impella, and 3 cases of combined IABP and PCPS. 4 patients died in the hospital and all were all from the fulminant group.

**Conclusion**: Electrocardiogram findings at admission to myocarditis are important, and in fulminant myocarditis, the QRS width was significantly wider and the pulse rate was faster. The prognosis for fulminant myocarditis is poor.