Introduction: Atrial fibrillation is an emergency when rapid anterograde conduction over an accessory pathway occurs in Wolff-Parkinson-White syndrome. If atrial fibrillation develops, rate-limiting effect of atrioventricular node is bypassed and excessive ventricular rates can lead to ventricular fibrillation or sudden death. It is important to control ventricular rate in Wolff-Parkinson-White syndrome with atrial fibrillation. We evaluated the effects of intravenous (IV) propafenone on the conduction system in Wolff-Parkinson-White syndrome patients with atrial fibrillation.

Methods: We reviewed electrophysiology (EP) findings of Wolff-Parkinson-White syndrome patients who developed sustained atrial fibrillation (>10 minutes) during EP study. There were 4 patients (3 men, aged 33 to 67 years) with a manifest accessory atroventricular pathway and history of supraventricular arrhythmia. All patients have normal echocardiogram (ECG) and laboratory test findings. We performed baseline EP study. After infusion of propafenone (2mg/kg up to 140mg into a peripheral vein over 10 minutes), we analyzed the change in mean R-R interval, which is the average of 10 R-R intervals at 5, 10, 20 and 30 minutes after propafenone. And we also analyzed the change of delta wave, blood pressure and surface ECG findings.

Result: All patients had typical Wolff-Parkinson-White syndrome with delta wave in sinus rhythm. Atrial fibrillation was occurred during atrial pacing in 2 patients, catheter insertion in 1 patent and ablation in 1 patient. After propafenone, atrial fibrillation was spontaneously terminated within 30 minutes in 1 of 4 patients. Atrial fibrillation was sustained in the other 3 patients and it was terminated after direct current (DC) cardioversion (100J). All patients showed prolonged mean R-R interval after IV propafenone (Table 1). Delta wave was disappeared within 5 minutes in 3 of 4 patients and it was recurred after 30 minutes to 1 hour. During procedure after IV propafenone, vital signs of all patients were stable. The location of bypass tract was left in 2 of 4 patients and right in the other 2 of 4 patients.

Conclusion: IV propafenone is a promising safe and effective agent for the ventricular rate control of Wolff-Parkinson-White syndrome with atrial fibrillation.