AV nodal reentrant tachycardia (AVNRT) considered as the most common regular supraventricular arrhythmia in humans. It originates from a location within the heart above the bundle of His. It is more common in women than men. It represents an important cause of palpitations and to lesser extent, dizzy spells and syncope. An invasive electrophysiological study is a helpful procedure in the classification of AVNRT into common (typical) and uncommon (atypical) types. This study aims to: (1) Assess the role of electrophysiological study in the classification of AVNRT. (2) Explore the presence of multiple pathways in respect to the usual dual AV nodal pathways. And (3) Used EP study as predictor for successful ablation of the slow pathway.

This study was conducted on Thirty nine (39) patients of either sex with paroxysmal supraventricular tachycardia corresponding to an AVNRT referred for catheter ablation. Each subject was submitted for history taking, examination, ECG, Echo study and basic invasive cardiac electrophysiological procedure that include right-sided cardiac catheterization through the femoral veins and programmed pacing was performed after localization of the catheters in the heart using the standard stimulation protocol to induce the tachycardia. In addition, His bundle study which involve measurement of atrial- His (AH) interval, Ventricular- atrial time (VA) as a baseline and after tachycardia induction, demonstration of the AH jump and/or echo beat (ectopic) pre and post ablation of the slow pathway using radiofrequency energy. However this study was conducted in Leipzig Heart Center/Germany from January 2013 to February 2014.

The result of this study reveals that 33 (84.6%) of the patients developed typical AVNRT and 6 (15.4%) with atypical AVNRT. 25
patients (64.1%) were females (23 (92%) typical type and 2 (8%) atypical type) and 14 patients (35.9%) were males (10 (71.4%) typical type and 4 (28.6%) atypical type). Among the patients group with typical AVNRT the 91.7% discovered to have two AV nodal pathways and 84.6% with three pathways in respect to 8.3% with two AV nodal pathway and 15.4% with three pathways within the patients group with atypical AVNRT. Accordingly, 38.5% of all patients in this study discovered to have multiple pathways. Concerning ablation and modification of the slow pathway, complete ablation is achieved in 59% while modification of the pathways was noticed in 41%.

In conclusion, this study concludes that an invasive electrophysiological study is a safe and reliable method for identification of patients with high risk of tachyarrhythmias. Moreover, most of the female patients discovered to have typical AVNRT. Unusually, higher percent of patients developed multiple pathways (more than two pathways) with respect to the usual dual pathways. The disappearance of post ablation EP data (AH jump and/or echo beat) reflect successful complete slow pathways ablation whereas the appearance of these data considered being a modification of the slow pathway.