**Introduction**: The clinical characteristics, and preliminary application of wearable cardioverter-defibrillator in China have not been well explored.

**Methods**: A total of 15 consecutive patients received WCD from June 2018 to March 2019 were analyzed. Clinical features, WCD compliance, feedbacks and treatment effects were collected from all patients.

**Result**: The median age of WCD patients was at 50 (38-63) years with 80% male. There were 40% patients with coronary artery disease, 66.7% with sustained ventricular tachycardia/ventricular fibrillation. The major prescription indications were the high risk of sudden cardiac death (SCD) during pre-cardiac transplantation (40%), following the acute myocardial infarction with left ventricular ejection fraction≤35%(34%). The median wear time was 31 (18-80) days, and the maximum time was 123 days while the minimum was 12 days. Only 5 patients continuously wear WCD over 1 month during a three-month follow-up. None of the patients continuously wear during the follow-up. Two major feedbacks were insomnia and device alarming without causes. Only one patient was recorded ventricular fibrillation for 13 times and successfully cardioverted by WCD.

**Conclusion**: A single-center experience from China WCD observational study initially demonstrates the clinical characteristics and preliminary application in patients with WCD, which further contributes to improving SCD prevention and enhancing the public awareness of WCD.