Survival after transvenous lead extraction due to infective indications

Antonio Curnis
Giampiero Maglia
Francesca Salghetti
Manuel Cerini
Davide Fabbricatore
Michela Raffo
Vincenzo Maiolo
Daniele Giacopelli
Luca Bontempi

Introduction: Although in case of infected devices a complete removal is recommended, data on long-term prognosis after transvenous lead extraction (TLE) are scant.

Methods: We analysed characteristics and survival of patients who underwent TLE in our centre due to infective indications between November 2013 and April 2018.

Result: Among 480 TLE procedures, 277 (58%) cardiac implantable device (35% pacemaker, 24% ICD and 37% CRT) recipients had a Class I indication for infection. Complete procedural success was achieved in 272 (98%) patients and no intra- or early post-procedure major complications occurred. During a median follow-up of 21 (7-33) months, there were 43 (15.5%) deaths. The most frequently reported causes of death were heart failure (37%), sepsis (19%) and acute kidney failure (12%). Deceased patients were older (median age 77 vs 72 years, \( p = 0.001 \)), with higher prevalence of atrial fibrillation (58% vs 38%, \( p = 0.021 \)) and kidney disease (60% vs 33%, \( p = 0.001 \)) than survivors. The Kaplan-Meier estimates of death rates were 12.4% (95% Confidence Interval [CI]: 8.6%-17.8%) and 24.2% (95%CI, 18.0%-31.9%) at 1 and 3 years, respectively. Using Cox regression model adjusted by baseline patient characteristics, the presence of vegetations on endocardial leads was associated with increased risk of all-cause mortality (Hazard Ratio: 2.46, 95%CI: 1.29-4.68, \( p = 0.006 \)).

Conclusion: Despite complete removal, CIED device infection is associated with high long-term mortality. The presence of vegetations seems a sign of worse prognosis suggesting that early TLE to limit their formation should be suggested.