Introduction: Inappropriate shocks (IAS) were associated with increased risk of mortality and deterioration of QOL in pts with ICD. To investigate the efficacy of remote monitoring systems (RM) for reducing IAS.

Methods: We retrospectively reviewed consecutive 202 pts who had been implanted ICDs from 2005. Incidence of IAS and device-related problems were reviewed in 101 pts under RM (CareLink (n=95)/HomeMonitoring (n=6)) during ≤2 yrs and in 101 control pts (C) who underwent conventional scheduled-checks during ≤2 yrs after ICD implantation.

Results: Age, gender, AF, single-chamber ICD, Fidelis-lead, VF detection rate, treatment with amiodarone and β blockers were not significantly different between RM and C groups, except for idiopathic VF (26 vs. 18%; p<.05) and LVEF (48 vs. 42%; p<.05). Kaplan-Meier survival curve revealed significant reduction of IAS under RM compared to C group (p=0.032). A total of 10/15 device-related problems were detected in C/RM groups. Device problems were more often confirmed just after IAS in C than RM group (80 vs. 27%; p<.01). In RM group, 73% of problems had been managed ≤2 days after data detection and did not cause IAS. Multiple regression analysis showed that RM (OR; 0.29, 95% CI; 0.11-0.78, p<.05) and age (OR; 0.97, 95% CI; 0.94-0.996, p<.05) were independently associated with IAS.

Conclusions: Incidence of IAS may be reduced under RM which enables us to detect device-related problems before the delivery of IAS from ICD.

Keywords: implantable cardioverter-defibrillator, remote monitoring system, shock