induced or spontaneous VF/VT throughout the duration of the study. Mean f/u was 13.5 mo. (Range 2–33 mo.). Sensing data below.

Implant (Mean ± SD)	R wave	A pacing spike	V pacing spike
baseline	12 mV ± 4.1	1.7 mV ± 1.6	1.7 mV ± 1.8
VF	9.3 mV ± 3.4	1.0 mV ± 0.83	2.2 mV ± 1.4

3 mo (Mean ± SD)	R wave	A pacing spike	V pacing spike
baseline	14 mV ± 2.6	0.66 mV ± 0.4	2.5 mV ± 2.4
VF	10 mV ± 5.8	0.90 mV ± 0.22	2.9 mV ± 2.3

Conclusion: Despite previously recommended guidelines, this study suggests UPS and ICDs are clinically compatible. However, careful intra-operative lead placement and device-device interaction testing is critical in these pts.

1176-175 Regional Differences in Utilization of Implantable Cardioverter/defibrillators – An Antiarrhythmics Versus Implantable Defibrillators (AVID) Registry Study

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We explored the hypothesis that the implantable cardioverter/defibrillator (ICD) implantation rate among pts with ventricular tachycardia or fibrillation varies between regions of the country. The proportions of ICD implants among 3633 non-randomized AVID registry pts were compared among the Northeast (NE), Mid-Atlantic (MA), Southeast (SE), Midwest (MW), Central/Mountain (CM), and Pacific (P) regions. Sites near geographic boundaries were allocated to achieve balanced population size among regions. Temporal changes were measured by computing the ICD implantation rate every 6 months beginning with January, 1993. Multivariate logistic regression was used to test for the interaction between region and other potential covariates. Fewer ICDs were implanted in the MA region (NE 46%, MA 34%, SE 43%, MW 47%, CM 54%, P 47%; χ^2 on 5 d.f.; $p < 0.001$). More ICDs were implanted in men (45% vs 40%, $p < 0.007$) and in pts <65 yrs (46% vs 42% $p < 0.01$). Pts with fee-for-service insurance, with or without Medicare, were more likely to receive an ICD than those without fee-for-service insurance (47% vs 41%, $p < 0.001$). With increasing market release of FDA approved nonthoracotomy (NTL) ICDs, the median semi-annual implant rate rose from 36% before April, 1995 to 53% after. Multivariate analysis revealed that age, gender, fee-for-service insurance, availability of NTL ICDs, and region of the country (MA) were all independent predictors of ICD implantation. Thus, even after adjusting for age, gender, insurance type, and availability of NTL ICDs, ICD implantation rate was lower in MA.

Conclusion: ICDs were less often utilized in the MA region. The regional difference cannot be explained by the age and gender distribution of the population, insurance type, or the availability of NTL ICDs.

1176-176 Clinical Outcome Following Cardioverter Defibrillator Implantation in Patients With Hypertrophic Cardiomyopathy

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Background: The implantable cardioverter defibrillator (ICD) is effective in aborting sudden cardiac death (SCD). Despite pharmacological therapy, prevention of SCD remains to be a therapeutic dilemma in patients with hypertrophic cardiomyopathy (HCM). Although ICDs have been used with increasing frequency, clinical outcome of this practice in HCM pts is unknown.

Methods: Outcome following ICD implantation was assessed in 21 pts (F/M = 6/15, age = 39 ± 17 yrs); 10 received an ICD for primary (group A) and 11 for secondary prevention (group B) of SCD.

Results: Of the 21 implants, 5 (24%) were epicardial and 16 (76%) were transvenous (7 active can, 1 subcutaneous patch); the defibrillation threshold (DFT) was 15 ± 3 J and 12 ± 5 J, respectively (p = ns). Tranvenous implantation was unsuccessful resulting in an epicardial lead system occurred in 1 pt and revision was required in 2 (1 SQ patch, 1 array) due to high DFTs prior to hospital dismissal. Complications occurred in 4 pts (1 pneumothorax, 1 pneumonia, and 2 hematoma). There was no operative mortality. During f/u (30 ± 28 mos), 2 pts (1 in each group) died (1 from MI and 1 from breast CA). Four pts received appropriate shocks (2 in each group) and 2 received inappropriate shocks (1 in each group). No high DFTs were found during routine follow up at 3 and 12 mos following initial implantation (10 ± 5 J and 14 ± 6 J, respectively).

Conclusions: ICD implantation in HCM pts can be accomplished with high success rate, low morbidity and mortality. DFTs remain stable during long-term follow-up. Appropriate ICD shocks suggest effectiveness in both primary and secondary SCD prevention in this high-risk population.

1176-177 ICD Implant Does Not Preclude Working Around Industrial Equipment

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Industrial work environments may contain equipment capable of producing electromagnetic interference (EMI). Large magnetic fields can inhibit needed implantable cardioverter defibrillator (ICD) therapy, while high frequency electrical noise may trigger inappropriate shocks. The purpose of this study was to investigate prospectively the safety of ICDs in this environment.

Methods: Patients were met at their workplace by a clinical engineer who interrogated the ICD, enabled the QRS beeper and extended the detection duration to 15 seconds. The magnet response and 1:1 QRS sensing were verified. Each patient walked through their workplace and performed typical duties while the ICD's beeper continuously monitored sensing status. At the conclusion of testing, all parameters were returned to their initial values.

Results: 17 pts (15 men, mean age 51 yrs) with ICDs (CPI) had workplace testing before returning to their job. All but 1 pt had a non-thoracotomy lead system. Only 1/146 ICD contacts with 105 types of industrial equipment (including 29 contacts with arc welding equipment) caused a problem. A steel worker was responsible for attaching a huge electromagnet to a crane used to move large steel coils. Therapy from his ICD was temporarily inhibited while in the magnetic field.

Conclusions: The use of a simple screening procedure can safely identify sources of EMI that may affect ICD operation. However, industrial sources of EMI rarely affect ICD function. Thus ICD implant does not preclude working around industrial equipment.

1176-178 In-hospital vs Out-of-hospital Presentation of Life-threatening Ventricular Arrhythmia Predicts Survival – Results From the Antiarrhythmics vs Implantable Defibrillators (AVID) Registry

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Data from the AVID registry were used to determine whether patients (pts) presenting with out-of-hospital (OOH) life-threatening ventricular arrhythmias (VA) have different short- and long-term prognosis from pts presenting with in-hospital (IH) VAs. AVID is a prospective, randomized study comparing the initial treatment of VA with an implantable cardioverter defibrillator or an antiarrhythmic drug (AAD). To be eligible for randomization, pts must have survived either cardiac arrest due to a VA or sustained ventricular tachycardia (VT) with hemodynamic compromise. IH VAs were seen in 838 and OOH VAs in 1926 pts. Pts with IH VAs had higher IH mortality (4.7% vs 1.2%, $p <$ 0.001), and were sicker than those with OOH VAs (IH/OOH): LV EF 0.30/0.34 ($p < 0.001$), history of (h/o) CHF 55%/40% ($p < 0.001$), h/o of atrial fibrillation 31%/22% ($p < 0.001$), h/o diabetes 31%/18% ($p < 0.001$), h/o VT 20%/14% ($p < 0.001$), h/o syncope 15%/10% ($p < 0.001$), h/o CABG/PTCA 37%/32% ($p = 0.01$), presence of CAD 80%/75% ($p = 0.005$), and AAD use at index event 18%/13% ($p < 0.001$). Discharge medications: diuretic 60%/46% ($p < 0.001$), digoxin 49%/40% ($p < 0.001$), and beta blockers 24%/29% ($p =$ 0.007). Prior histories of VF, MI, cigarette use, nonischemic cardiomyopathy, and ACE and calcium blocker use were not significantly different. The relative risk (adjusted for baseline variables) for long-term mortality in IH pts was 2.3 compared to OOH pts ($p < 0.001$).

Conclusion: Pts with IH resuscitation are sicker, have lower IH survival, and greater long term mortality compared to those whose index VA occurs OOH. This difference in survival remains after adjusting for all the measured baseline predictors.