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Tips and Tricks to Writing a Great Abstract

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Why write an abstract?*

- Organizes your thinking
 - Learning writing and, if accepted, presenting
 - Questions at presentation can inform the manuscript
 - An academic achievement that demonstrates your interest in research
- 

*I will discuss writing an abstract for submission to a scientific meeting—much but not all applies to writing an abstract for a paper



Issues to consider

- General
- Title
- Introduction
- Methods
- Results
- Conclusions



Outcomes after Primary Prevention Implantable Cardioverter Defibrillator Placement: Results of the Cardiovascular Research Network Longitudinal Study of ICDs

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Background: Implantable cardioverter defibrillators (ICDs) are commonly used for the primary prevention of sudden cardiac death. Controversies persist, however, about outcomes in representative cohorts and in clinically important patient subgroups. Observational studies of outcomes following primary prevention ICD implantation are typically limited to relatively restricted cohorts (e.g. Medicare) or with short follow up.

Methods: In the Cardiovascular Research Network (CVRN), we conducted a study in 7 integrated health care delivery systems to identify patients undergoing primary prevention ICD implantation for left ventricular systolic dysfunction between 2006-2010. Baseline procedural and clinical data were obtained from the NCDR ICD Registry; longitudinal data to ascertain outcomes after implantation were obtained through clinical health system data from the CVRN Virtual Data Warehouse. We assessed the occurrence of complications at 90 days and mortality, all-cause hospitalization, and heart failure hospitalization up to 5 years after implantation in clinical strata designated a priori. Multivariable models accounting for clustering of patients within site were used to assess the relationship between clinical variables and each outcome. Clinical variables of interest (Table) were included in all models; additional variables were assessed with forward selection to account for possible confounders.

Results: Among 2953 eligible patients, median age was 69 years and 26% were women. Coexisting conditions, including hypertension (74%), atrial fibrillation (32%), COPD (20%), and diabetes (42%), were common. Overall event rates (per 1000 patient years) were 110 for death, 438 for any hospitalization, and 58 for heart failure hospitalization. The association between clinically important variables and outcomes are shown in the Table.

Conclusions: In a diverse population of patients undergoing ICD implantation in contemporary practice we identified specific clinical variables associated with adverse outcomes. These data can inform prognosis in clinical care and guide the design of future trials of this therapy.

Variable	Count (%) n=2953	Complications ¹ OR (95% CI) n=2882	Hospitalization ² Hazard Ratio (95%CI) n=2953	HF Hospitalization ² Hazard Ratio (95% CI) n=2953	Mortality ³ Hazard Ratio (95% CI) n=2953
Age >65 (vs 18-65)	1827 (61.9%)	1.157 (0.86, 1.56)	1.059 (0.96, 1.18)	1.193 (1.00, 1.42)	1.582 (1.33, 1.89)
Female (vs Male)	769 (26.0%)	1.344 (1.00, 1.81)	0.932 (0.83, 1.04)	0.841 (0.70, 1.00)	0.675 (0.57, 0.81)
NYHA III-IV (vs I-II)	1139 (38.6%)	1.368 (0.98, 1.91)	1.282 (1.17, 1.41)	1.544 (1.33, 1.80)	1.892 (1.60, 2.24)
LVEF ≤30 (vs 31-36)	1968 (66.6%)	1.032 (0.77, 1.38)	1.065 (0.97, 1.17)	1.185 (1.00, 1.39)	1.257 (1.08, 1.46)
Ischemic HD	1927 (65.3%)	0.981 (0.73, 1.32)	1.296 (1.17, 1.44)	1.095 (0.92, 1.30)	1.298 (1.10, 1.54)
Atrial Fibrillation	947 (32.1%)	0.818 (0.61, 1.10)	1.334 (1.21, 1.47)	1.543 (1.33, 1.80)	1.262 (1.10, 1.45)
EGFR 0-30 (vs >30)	231 (7.8%)	0.861 (0.52, 1.43)	1.074 (0.89, 1.30)	0.855 (0.65, 1.13)	1.040 (0.81, 1.33)

¹ Also adjusted for ICD Device Type

² Also adjusted for Race group, BUN, HGB

³ Also adjusted for ICD Device Type, BUN, HGB

Generally, speaking...

DO

- Prepare early and share with senior authors
- Review language
- Assess for coherence & continuity
- Obey word limit
- Consider the reviewer

DON'T

- Write it up at the last minute
- Forget to proofread
- Introduce concepts "downstream" that haven't been introduced "upstream"
- Use "new" abbreviations or jargon
- Use footnotes



Review, proofread, review, and review

Abstract

Background: Heart failure with preserved systolic function is common, but whether this condition particularly affects women is not known.

Objective: To determine if women are more likely to have heart failure with preserved systolic function, independent of other potential confounders of this relationship, including age.

Design: Cross-sectional study using data from retrospective medical chart abstraction of a national sample of Medicare beneficiaries hospitalized with heart failure.

Setting: Acute care non-governmental hospitals in the United States.

Patients: A national cohort of 20,388 patients age 65 years or older with a principal discharge diagnosis of heart failure April 1998 and March 1999, inclusive, and documentation of left ventricular systolic function. The diagnosis of heart failure was confirmed either by medical history or radiographic evidence of heart failure at admission.

Main Outcome Measures: Preserved left ventricular systolic function defined as qualitatively normal systolic function or quantitatively reported left ventricular ejection fraction ≥ 0.50 .

Results: Preserved left ventricular systolic function was present in 6,700 (35%) of the cohort, 79% of whom were women. In contrast, among those with left ventricular systolic function, 49% were female (unadjusted OR = 2.49, 95% CI 2.34, 2.65). After adjustment for age and comorbidity, this correlation persisted (OR = 2.10, 95% CI 1.94, 2.28). Meanwhile, the correlation with advancing age was only clinically significant in patients older than 85 years old.

Conclusions: Among hospitalized Medicare beneficiaries with heart failure, women are much more likely to have preserved left ventricular systolic function than

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Needs to be stronger.

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This is confusing – and do you mean dysfunction?

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Numbers missing.

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Not clear.

Consider the Reviewer

- Reviewing dozens (sometimes 100+) of submissions in a short time period
- Need to catch their attention
- Little patience for typos, errors in methods, overstatement



Abstract Title

DO

- Catch the reviewer's eye
- Match to findings

DON'T

- Over-promise
- Be too literal or too general



Introduction

- Avoid “boilerplate” (generic) statements
 - “Heart failure is common and is associated with high morbidity and mortality”
- Two sentences (or so) that get to the point
- What is known and what will you add?
- It must match the conclusions
 - “Our objective was to assess adherence after MI” does not match with a conclusion “Women with MI have greater survival with beta blocker therapy”

Methods

- You must condense
- Simple things (e.g. bivariate analysis) are implied--focus on the complex (e.g. multivariable models)
- IRB approval is assumed, so doesn't need mention (although you must have approval)
- Use statistical consultant to avoid common errors

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{1i}^2 + \epsilon_i$$

Results—not quite like a paper

- Tell the story—no more and no less
- Anything not critical to the “story” can go into presentation
- **Consider table or figure for complex results** avoid the “number blizzard”
- “Negative” results—what are the confidence intervals?
- Present both relative and absolute risks



Consider Table or Figure for Complex Data

<i>Variable</i>	<i>Count (%)</i> <i>n=2953</i>	<i>Complications¹</i> <i>OR (95% CI)</i> <i>n=2882</i>	<i>Hospitalization²</i> <i>Hazard Ratio</i> <i>(95%CI)</i> <i>n=2953</i>	<i>HF</i> <i>Hospitalization²</i> <i>Hazard Ratio</i> <i>(95% CI)</i> <i>n=2953</i>	<i>Mortality³</i> <i>Hazard Ratio</i> <i>(95% CI)</i> <i>n=2953</i>
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Conclusions

- DO

- Summarize results conceptually
- Why are they interesting?
- Where do they lead?

- DO NOT

- simply restate your results
- conclude what your results do not support
- use causal language for observations
- overstate “negative” results



Key Points

- Remember the reviewer
- Logical flow and coherence are critical
- Watch your language
- Read, revise, consult, re-read, revise....
- Be proud of your work, but don't over-state it!
- If you don't succeed the first time...





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¡GRACIAS!

