How to publish your results

Jesus Rodríguez Baño

Hospital Universitario Virgen Macarena Seville, Spain

jesusrb@us.es

A friend of mine always say...

Writing is just for those with the "writing gene"

- Inspiration? Yes, it exists. Well, it usually appears while I am working.

Pablo Picasso

The same study on MRSA bacteraemia may generate different comments from a reviewer according to how data are presented…

- Just another boring series of patients with MRSA bacteraemia
- Difficult to read
- Predictable
- Nothing new

REJECT

- OK, it's another paper on MRSA bacteraemia but…
- Data are clearly presented
- Good discussion
- Some interesting points

LET'S GIV'EM AN OPPORTUNITY

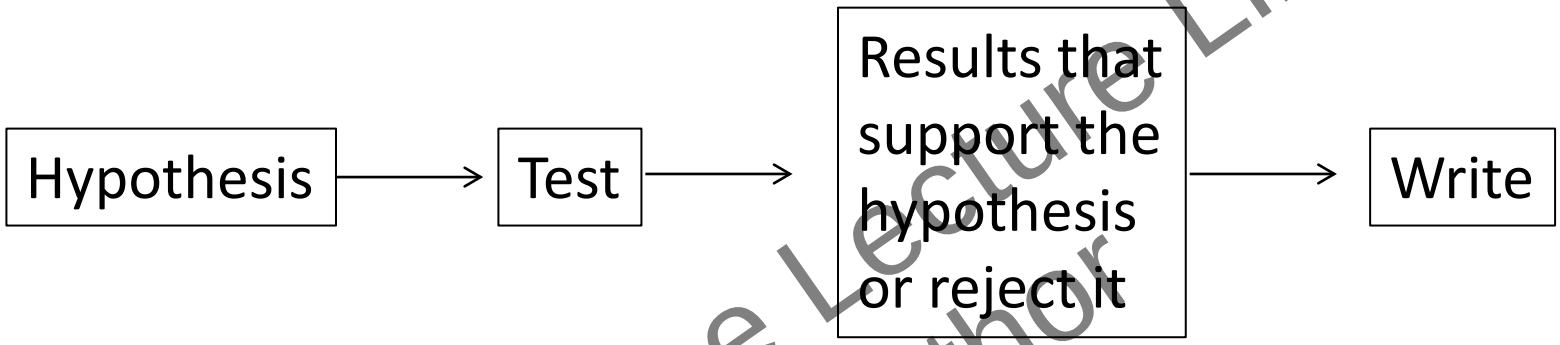
Your task…

- Convince the editor and reviewer that your study was necessary
- That it was well performed
- That your results are consistent, accurate and interesting
- That you solve a problem or at least open a new door…

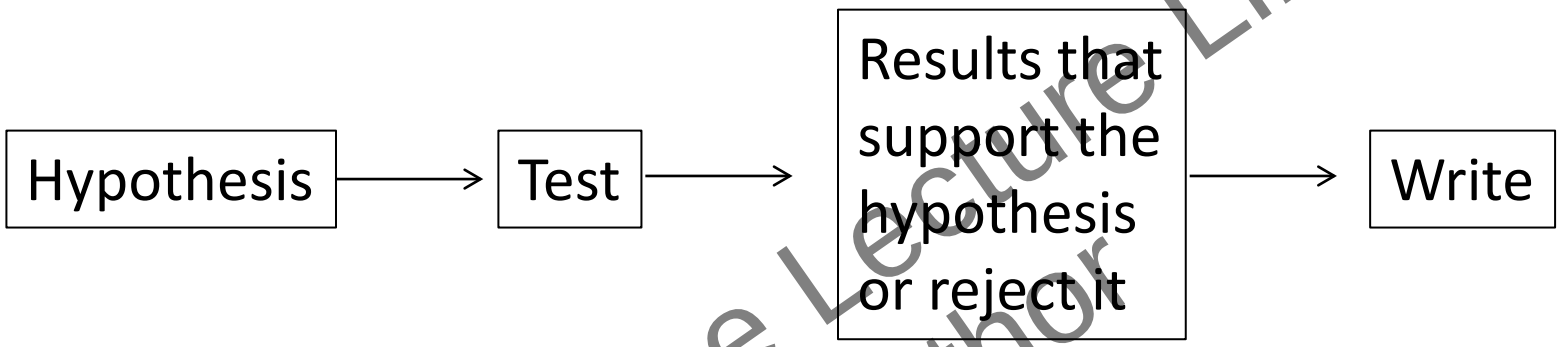
Some tips…

- Read, read, read
  - Papers you like: learn how they wrote it!
    - Structure
    - Preciseness
    - Selling
  - "Copy" (in the good sense): take good sentences from others
- Write, write, write

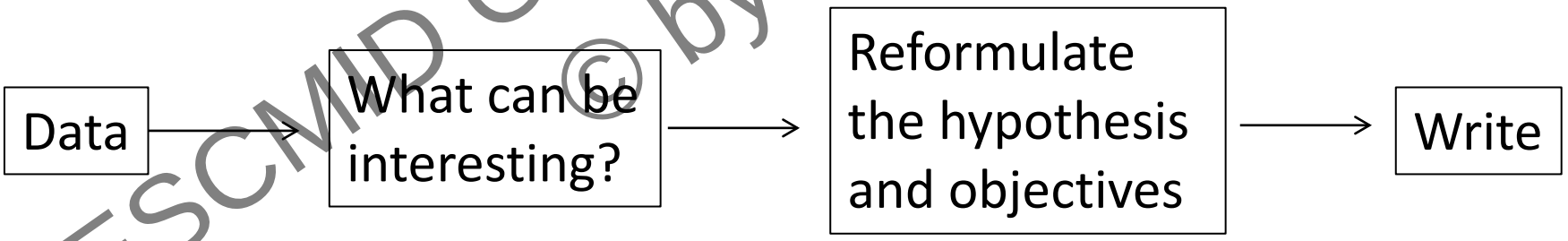
In theory….



In theory….



But too many times…



The Editor

- Usually just reads the letter, title and abstract
- (Sometimes also do a very brief overview)
- Decides:
  - Sending to reviewers (you have an opportunity)
  - Direct rejection
- Formal aspects (authors' instructions) matter
- TITLE AND ABSTRACT ARE VERY IMPORTANT!!

The reviewers

- May be (or not) be experts
- Might be competitors
- Probably are busy people
- Reviewing is for free
- Are probably tired of reviewing bad papers

- Do facilitate their work!!

A matter of strategy

How articles are read

- Title
- Abstract
- Introduction
- Methods
- Results
- Discussion

How I write articles*

- Results
- Methods
- Introduction
- Discussion
- Abstract
- Title

*Be careful, I might be wrong (but it works)

When thinking of your results

- Do not take anything for granted
- What does everything mean. Interpretation?
- Were they what you expected? Why not?
- Anything new? Anything curious?
- Any other way of analysing?
- Any other way of presenting?

Results

- Select what would go for tables and figures
  - Tables: data that would need much text to explain and/or description would be confusing
  - Figures: flow charts, impact of imaging
- Remember: tables and figures should be understandable by themselves
- Clinical studies
  - Table 1: descriptive data of the series/cohorts/cases and control group
  - Figure 1 usually a flow chart of patients included

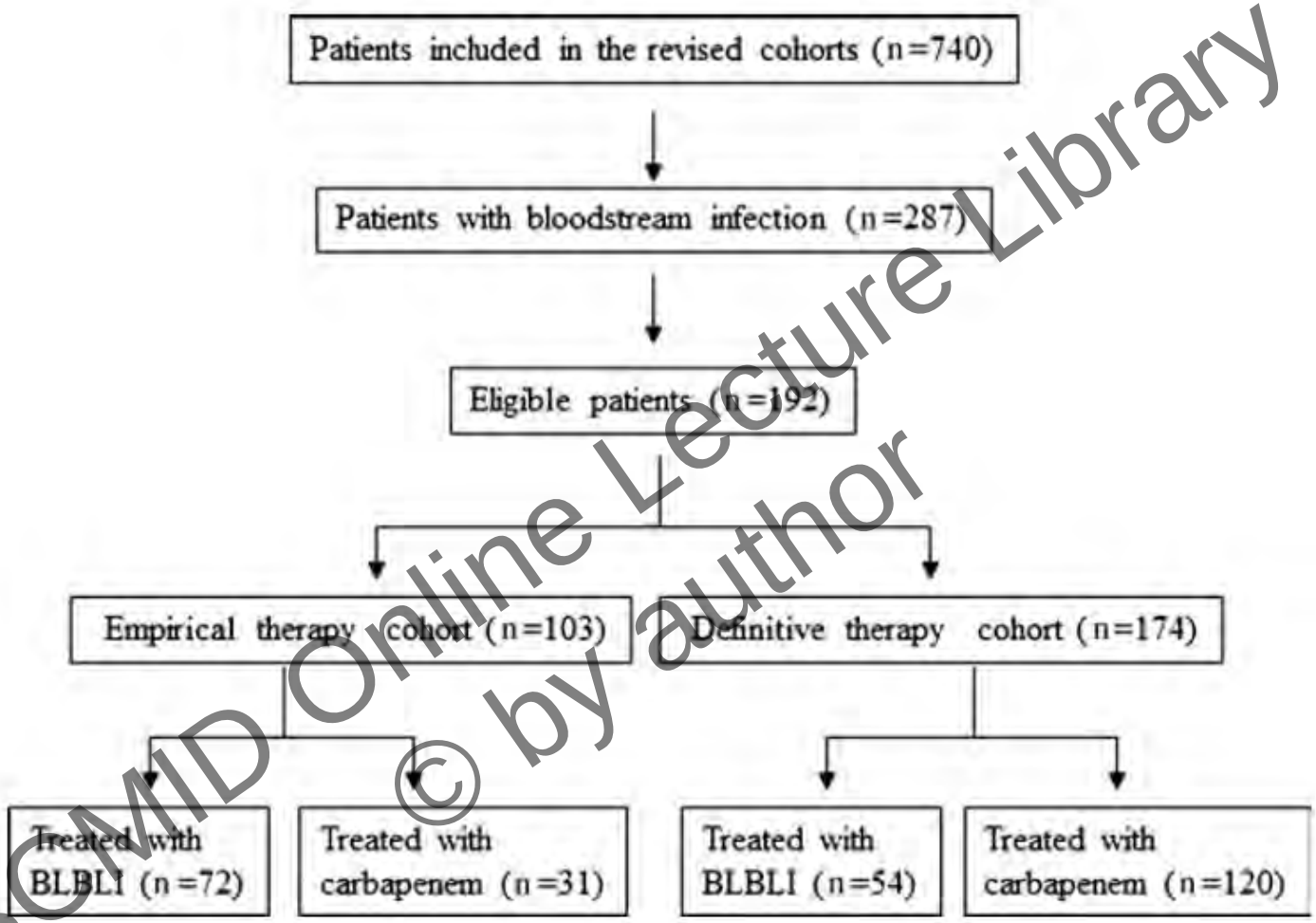


Figure 1. Flow chart of patients included in the study. BLBLI, β-lactam/β-lactamase inhibitor.

Clin Infect Dis 2012; 54: 167-174

TABLE 1 Features of 801 episodes of bloodstream infections, according to adequate or inadequate empirical therapy

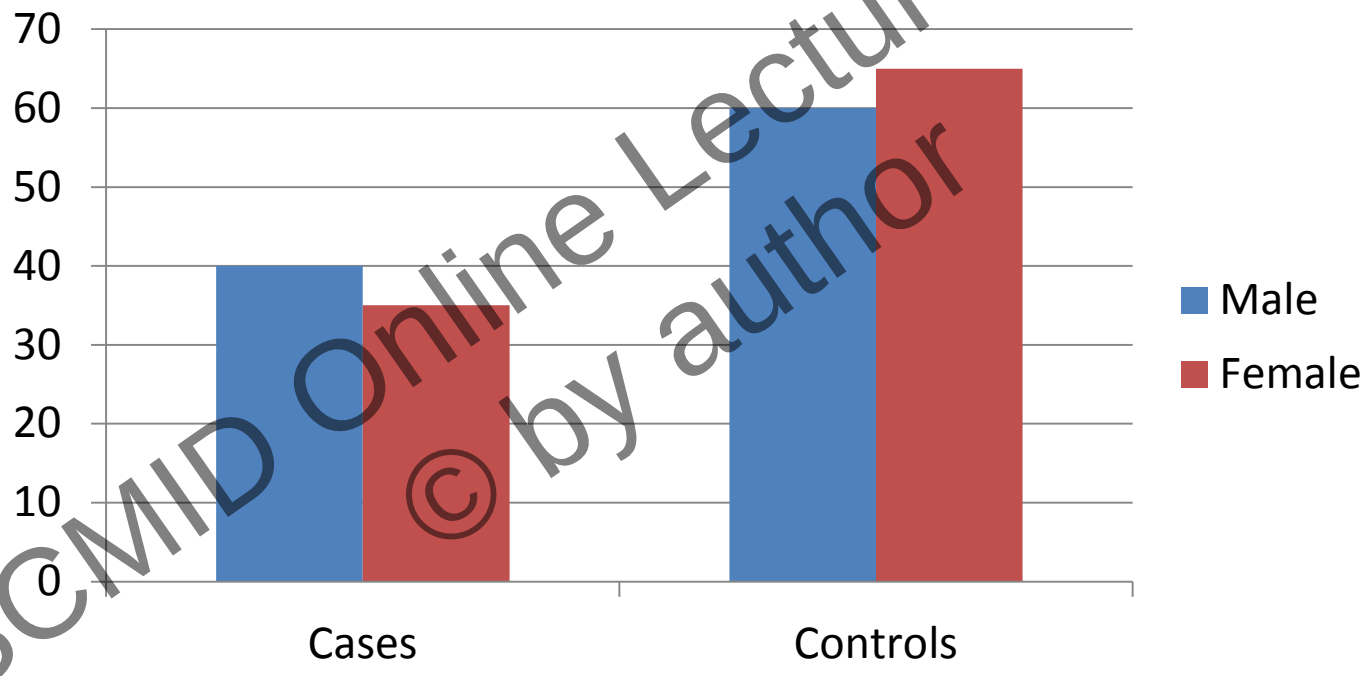
Characteristic	Value[a]		
	Inadequate empirical therapy (n = 199)	Adequate empirical therapy (n = 602)	P value[b]
Hospital-acquired infection	142 (71.4)	318 (52.8)	<0.001
Male gender	116 (58.3)	357 (59.3)	0.8
Median age (yr) (interquartile range)	67 (56–76)	66 (51–75)	0.3
Tertiary hospital	154 (77.4)	483 (80.2)	0.3
ICU admission	43 (21.6)	1112 (18.6)	0.3
Median Charlson index (interquartile range)	2 (1–4)	2 (1–3)	0.2
Median Pitt score (interquartile range)	1 (0–3)	1 (0–3)	0.9
Cancer	67 (33.7)	160 (26.6)	0.05
Diabetes mellitus	48 (24.1)	159 (26.4)	0.5
Chronic pulmonary disease	25 (12.6)	80 (13.3)	0.7
Chronic renal insufficiency	20 (10.1)	70 (11.6)	0.5
Chronic liver disease	18 (9)	55 (9.1)	0.9
Neutropenia	9 (4.5)	37 (6.1)	0.3
Central venous catheter	77 (38.7)	168 (27.9)	0.004
Urinary catheter	81 (40.7)	195 (32.4)	0.03
Mechanical ventilation	28 (14.1)	66 (11)	0.2
Parenteral hyperalimentation	18 (9)	26 (4.3)	0.01
Previous antimicrobial use	98 (49.2)	231 (38.5)	0.008
Surgery	39 (19.6)	75 (12.5)	0.01
Source of bacteremia			0.002
Unknown	55 (27.6)	135 (22.4)	
Urinary tract	23 (11.6)	137 (22.8)	
Intra-abdominal infection	29 (14.5)	110 (18.2)	
Vascular catheter	51 (25.6)	82 (13.6)	
Respiratory tract	25 (12.6)	77 (12.8)	
Other source	16 (8)	61 (10.1)	

Antimicrob Agents Chemother 2012; 56: 472

This does not need a table…

	Mean change in CFU /mL (SD)
Treated	-3.4 (1.2)
Controls	-0.5 (0.7)

This does not need a figure…



What's wrong?

	Cases	Controls	P
Male	71 (51%)	145 (53%)	0.2
Female	69 (49%)	138 (47%)	0.2
Etc			

Tables case-control studies

Risk factor	Case patients (n = 95)	Control group A (n = 190)	OR (95% CI)	P	C
Age >65 years	69 (73)	96 (51)	2.5 (1.5–4.3)	<.001	
Female gender	42 (44)	80 (42)	1.0 (0.6–1.7)	.7	
Health care–associated bacteremia	72 (76)	102 (54)	2.6 (1.5–4.6)	<.001	
Previous admission	45 (47)	63 (33)	1.8 (1.0–2.9)	0.02	
Nursing home residency	10 (11)	3 (2)	7.2 (1.9–27.1)	.001	
Hemodialysis	4 (4)	4 (2)	2.0 (0.4–8.3)	.3	
Day hospital	37 (39)	59 (31)	1.4 (0.8–2.4)	.1	
Home care	2 (2)	2 (1)	2.0 (0.2–14.5)	.4	
Transplant	0 (0)	1 (1)	…	.4	
Charlson index >2	46 (48)	71 (38)	1.5 (0.9–2.5)	.08	
Diabetes mellitus	24 (25)	36 (19)	1.4 (0.7–2.5)	.2	
Chronic pulmonary disease	18 (19)	33 (18)	1.1 (0.5–2.0)	.7	
Heart failure	11 (12)	19 (10)	1.1 (0.5–2.5)	.6	
Neoplasia	24 (25)	35 (19)	1.4 (0.8–2.6)	.1	
Cirrhosis of liver	10 (11)	6 (3)	3.5 (1.2–10.1)	.01	
Chronic renal insufficiency	10 (11)	14 (7)	1.4 (0.6–3.4)	.3	
Use of immunosuppressive drugs	7 (7)	25 (13)	0.5 (0.2–1.2)	.1	
Obstructive urinary disease	26 (27)	16 (9)	4.0 (2.0–8.0)	<.001	
Obstructive biliary disease	8 (8)	7 (4)	2.3 (0.8–6.8)	.09	
Neutropenia	4 (4)	7 (4)	1.1 (0.3–4.0)	.8	
Venous catheter use	8 (8)	10 (5)	1.6 (0.6–4.3)	.3	
Urinary catheter use	23 (24)	17 (9)	3.2 (1.6–6.4)	.001	
Surgery	12 (13)	10 (5)	2.5 (1.0–6.2)	.02	
Previous antimicrobial use	39 (41)	44 (23)	2.2 (1.3–3.8)	.002	
Aminopenicillins	7 (7)	22 (12)	0.6 (0.2–1.4)	.2	
Cephalosporins	12 (13)	17 (9)	1.4 (0.6–3.2)	.3	
Fluoroquinolones	23 (24)	15 (8)	3.7 (1.8–7.5)	<.001	

Clin Infect Dis 2010; 50: 40-48

Tables cohort studies

TABLE 2 Univariate analysis of associations between exposure to different variables and 14-day mortality in 801 episodes of bloodstream infection

Variable	Mortality at 14 days (no. of deaths/no. of infections [%])	RR (95% CI)	P value[c]
Gender			
Male	96/473 (20.3)	Reference	
Female	52/318 (15.9)	0.71 (0.57–1.06)	0.1
Age (yr)			
≤55	25/204 (12.3)	Reference	
>55	123/597 (20.6)	1.68 (1.13–2.51)	0.007
Type of acquisition			
Community	22/149 (14.8)	Reference	
Health care associated	34/192 (17.7)	1.20 (0.73–1.96)	0.4
Hospital	92/560 (20)	1.35 (0.88–2.08)	0.1
Type of hospital			
Tertiary	112/637 (17.6)	Reference	
Community	36/164 (22.0)	1.25 (0.89–1.74)	0.1
Charlson index			
0–1	42/334 (12.6)	Reference	
2	41/212 (19.3)	1.54 (1.04–2.28)	0.03
≥3	65/255 (25.5)	2.03 (1.52–3.74)	<0.001
Neutropenia			
No	133/755 (17.6)	Reference	
Yes	15/46 (32.6)	1.85 (1.19–2.88)	0.01
Pitt score			
0-1	47/491 (9.6)	Reference	
2	15/92 (16.3)	1.70 (1.00–2.91)	0.05
≥3	86/218 (39.4)	4.12 (3.00–5.66)	<0.001

Antimicrob Agents Chemother 2012; 56: 472

Results: text

- Logical order according to the story (not your experiments)
- Clear, concise
- Straight to the point. Avoid unnecessary data
- Neither comments nor interpretations
- Be sure to answer the research question and objectives
- Remember the reader does not know your data

Results: frequent mistakes

- Messy order
- Methods repeated
- Undefined variables or procedure
- Repeating data already in tables
- Comments or opinions
- Variables defined in Methods not used in Results
- Inconsistency with objectives
- Non relevant results included

Methods

- Allow someone else to reproduce the study and evaluate the validity of your results
- Boring BUT reviewers take it seriously

Methods

- Clinical and epidemiological studies
  - Design, site and population.
  - Method for detecting, selecting and following participants
  - State and define variables
    - Main and secondary outcome variables
    - Independent variables
  - Who and how is collecting the data
  - Ethical aspects
  - Statistical analysis
- Laboratory studies
  - Materials
  - Procedures

Introduction

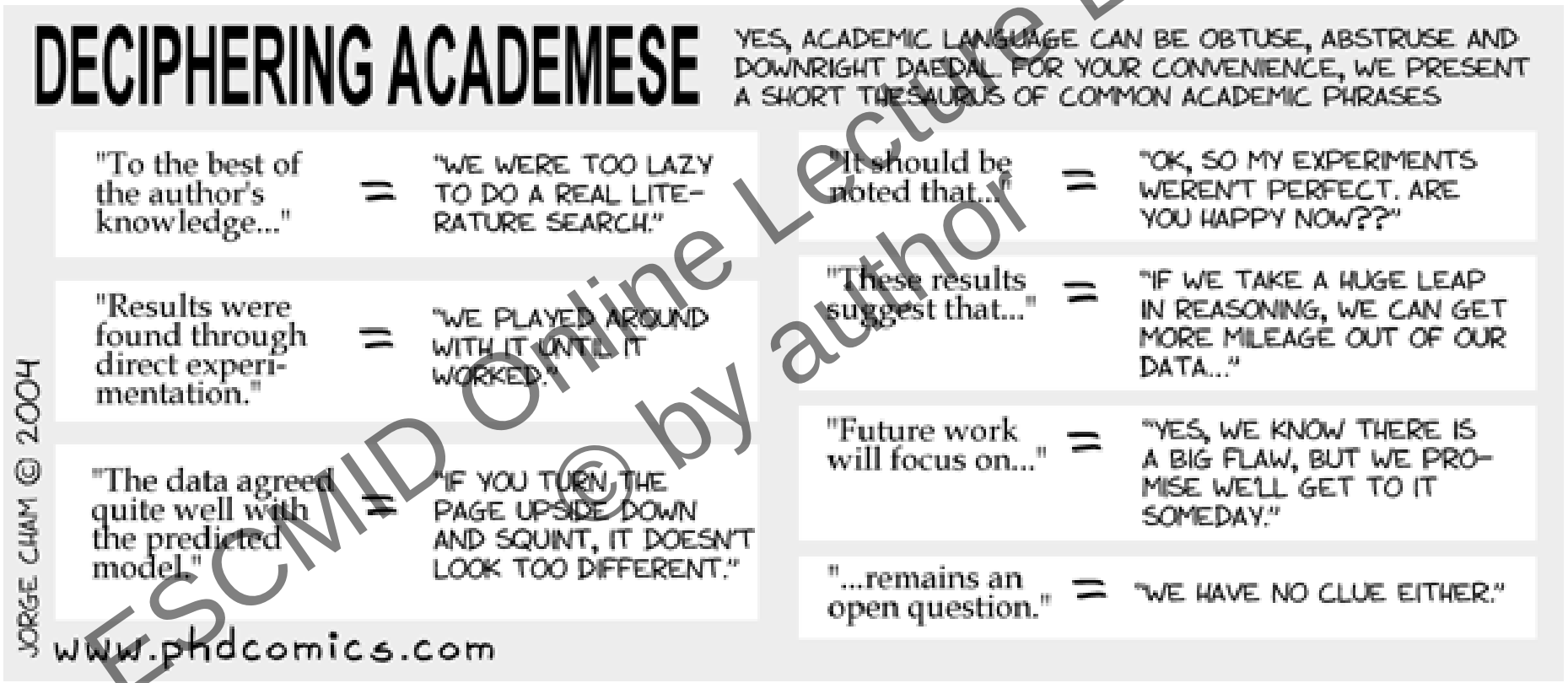
- Objective: the reader knows why your study is important and what are your objectives
- 2-3 paragraphs
  - Background – importance of the topic, where we are
  - Gap in knowledge
  - What are your (hypothesis and) objectives
- Outline your ideas
- According to the journal
  - General vs. specialized journals

Discussion

- Include
  - Key results
  - Interpretation. Other publications.
  - Limitations and strengths
  - Generalisability
- Outline!!

Discussion

- Don´t be too hypothetical…
- But do go beyond the data!!



Discussion

- What your paper found (key results)
  - Results: Clinical cure was achieved in 15% of patients treated with A and in 2% of those treated with B (absolute difference, 13%, 95% CI, 8%-22%). … … … Multivariate analysis showed that treatment with B was independently associated with clinical cure when controlling for confounders (OR=2.3, 95% 1.7-2.9)
  - Discussion: A sentence for that??

Discussion

- What your paper found (key results)
  - Results: Clinical cure was achieved in 15% of patients treated with A and in 2% of those treated with B (absolute difference, 13%, 95% CI, 8%-22%). … … … Multivariate analysis showed that treatment with B was independently associated with clinical cure when controlling for confounders (OR=2.3, 95% 1.7-2.9).
  - Discussion: Our results consistently showed that B was more effective than A in the treatment of…

Discussion

- Interpretation
  - Put your data in context
  - Compare and comment previous data and other evidence
  - What does it means for clinical practice or future research
- Generalisability
  - To which situations may your data be extrapolated

Discussion

- Limitations
  - Always include a paragraph with them
  - Don’t try to hide the obvious ones
  - Briefly comment if they are important or how they may change the interpretation
- Conclusion

Abstract

- Non-structured or structured

- Write at the end
- Yes, it's boring but CRITICAL
- Do not just simply copy-paste from the text
- Read your paper and take notes → write the abstract from the beginning

Title

- Informative of the topic and methods
- Attractive, tempting (not too much…)

Epidemiology and Clinical Features of Infections Caused by Extended-Spectrum Beta-Lactamase-Producing *Escherichia coli* in Nonhospitalized Patients

J Clin Microbiol 2004; 42: 1089-1094

Now my title would be more like:

Emerging multidrug resistant *Escherichia coli* in the community: risk factors and clinical features

Feel free to criticize…

Bacteremia Due to Extended-Spectrum β-Lactamase–Producing *Escherichia coli* in the CTX-M Era: A New Clinical Challenge

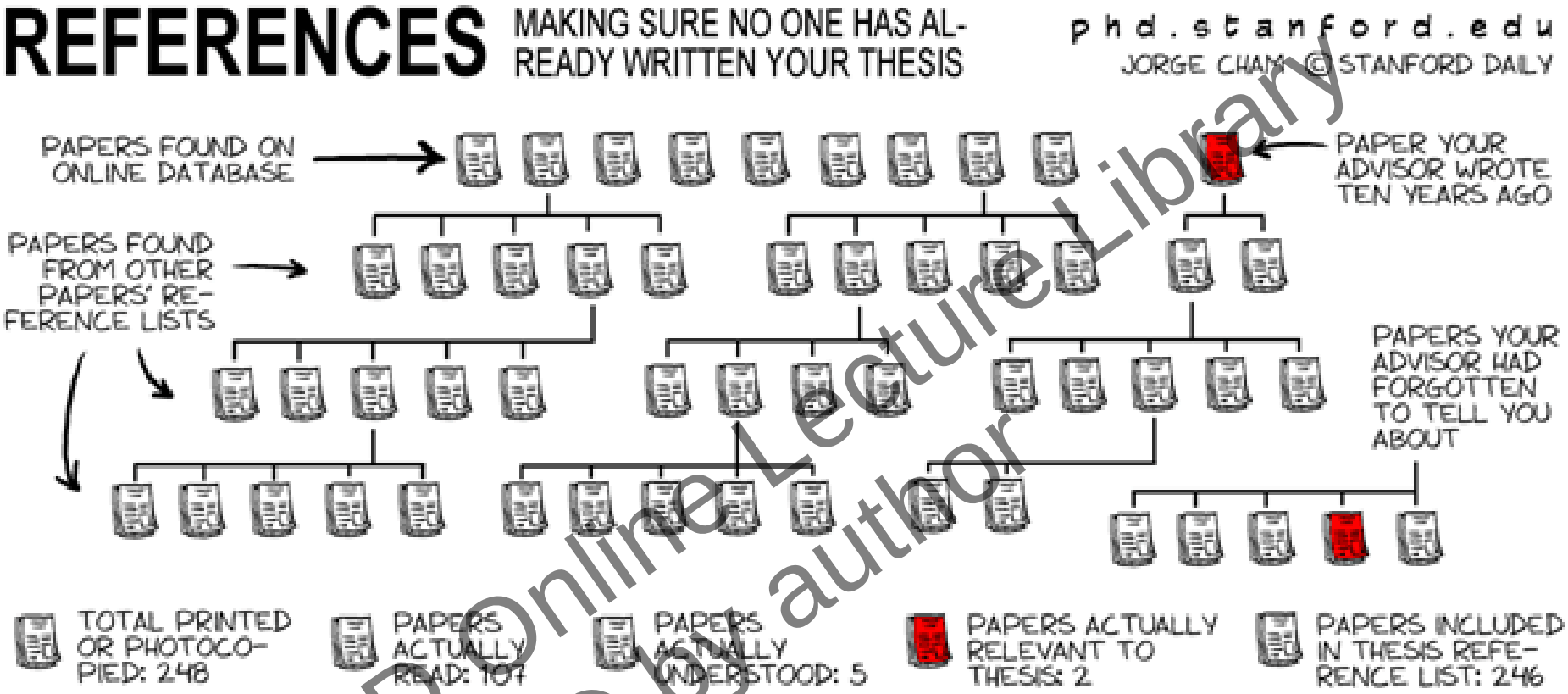
Clin Infect Dis 2006

Long-term control of hospital-wide, endemic multidrug-resistant *Acinetobacter baumannii* through a comprehensive "bundle" approach

Am J Infect Control 2009

β-Lactam/β-Lactam Inhibitor Combinations for the Treatment of Bacteremia Due to Extended-Spectrum β-Lactamase–Producing *Escherichia coli*: A Post Hoc Analysis of Prospective Cohorts

Clin Infect Dis 2011



(If you are going to include some potential reviewers, be sure to include their papers in the list)

Look at the checklists from…

OPEN ACCESS Freely available online

PLoS MEDICINE

Guidelines and Guidance

CONSORT 2010 Statement: Updated Guidelines for Reporting Parallel Group Randomised Trials

Kenneth F. Schulz[1]*, Douglas G. Altman[2], David Moher[3], for the CONSORT Group[¶]

The ORION statement: guidelines for transparent reporting of outbreak reports and intervention studies of nosocomial infection

Sheldon P Stone, Ben S Cooper, Chris C Kibbler, Barry D Cookson, Jenny A Roberts, Graham F Medley, Georgia Duckworth, Rosalind Lai, Sarah Ebrahim, Erwin M Brown, Phil J Wiffen, Peter G Davey

Annals of Internal Medicine | ACADEMIA AND CLINIC

The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: Guidelines for Reporting Observational Studies

Erik von Elm, MD; Douglas G. Altman, DSc; Matthias Egger, MD; Stuart J. Pocock, PhD; Peter C. Gøtzsche, MD; and Jan P. Vandenbroucke, MD, for the STROBE Initiative

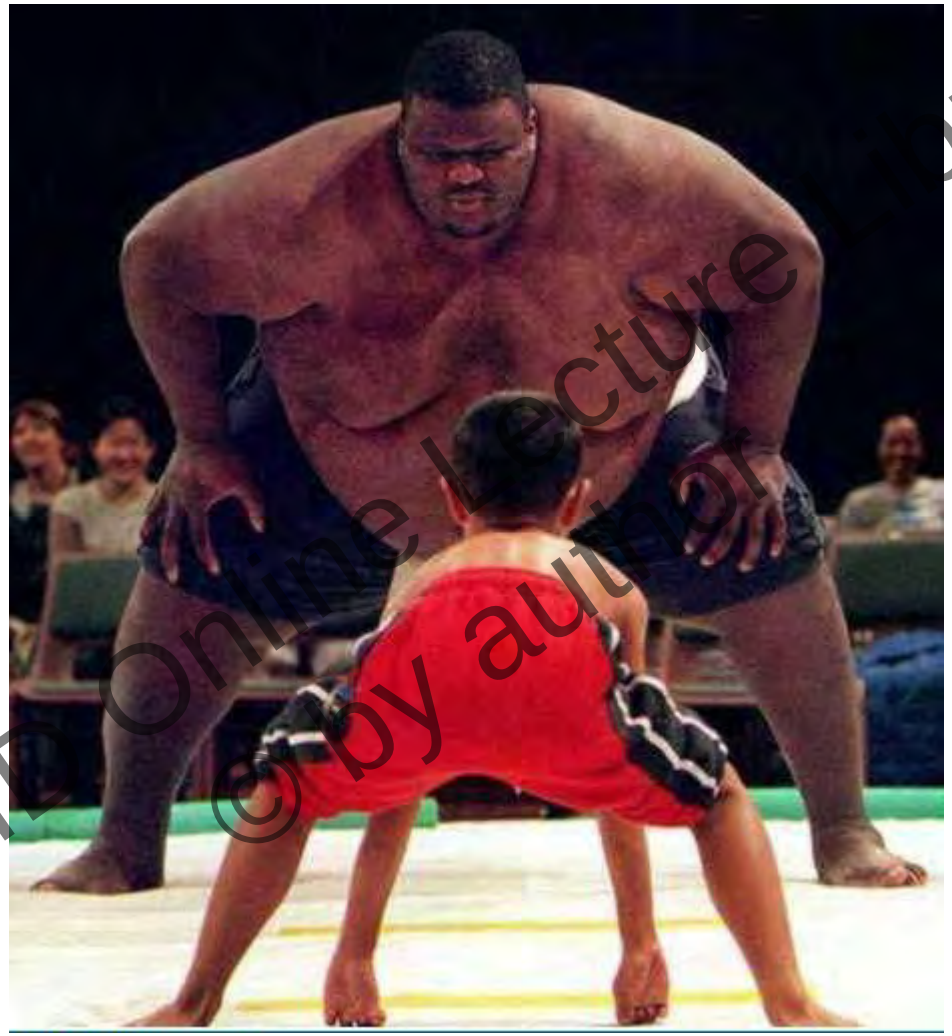
Rebound letter

- If the editor gives you the opportunity… that sounds good!
- Be grateful and polite to reviewers (although you would like to kill them)
- Answer all their questions and comments
- If changes are suggested, do as suggested. Only reject doing so if:
  - They ask for the impossible
  - You can convincingly argue

- The reviewer raise a very important question…
- … Although we agree that…, we are afraid we cannot follow the reviewer's suggestion because the data are unavailable. However, we think that…
- Although … we are afraid that was beyond the objective of our study.

After finishing…

- Leave it there and read again 3 days later
- Show to your colleges for review



Yes, you can!!

Thank you

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