How to write a good peer review

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Purpose of peer review

To improve scientific articles (NOT to discard!)

- by checking methodological and presentational mistakes
- by confirming novelty and ethical issues
- by providing constructive criticism

- Good reviewer: an expert who can detect the strength of the study, and tell the authors how to present it

- True expert: who reviews "recently published papers" in one's field

Good *vs.* bad reviewers

	Good reviewer	Bad reviewer
Attitude	• Optimistic • Polite (tells how to fix it) → Provide a solution!	• Pessimistic • Rude (just tell it is wrong) → Raise a problem!
Fairness	• Unbiased and honest	• Prestige depending on author or institution
Quality	• Professional, informative, and constructive • Detects statistical errors	• Unclear personal criticism without references • Invalid argument • Cannot detect fraud
Others	• Timely and confidential • Good author (write what they want to receive)	• Poor reader, poor writer (do not know what is important and novel)

A good peer review

1. Constructive comments

2. Details of the review

3. Rational decision making

A good peer review

1. Constructive comments

2. Details of the review

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Five consecutive stages

1. Identify the research question

2. Search relevant studies

3. Check inclusion & exclusion criteria

4. Summarize the results

5. Find statistical evidence for conclusions

1	**PubMed**
2	**EBSCO** Discovery Service
3	**Embase®**
4	**KoreaMed**
5	Gateway to Japan's Medical Knowledge **Medical*Online-E**
6	**Scopus**
7	**WEB OF SCIENCE™**
8	**Google** Scholar
9	**RISS**
10	**NDSL**
11	한국학술지인용색인 **Korea Citation Index**

To the editor	NOT sent to the authors	• Accept? Reject? Revision? • Rationale on decision? • Willing to write an editorial?
To the author	Summary	• Key message (importance, novelty, clinical applicability, impact..)
	Major comments	• Strength and weakness of each section in written order: Title → Abstract → Introduction → Methods → Results → Discussion → References → Tables → Figures..
	Minor comments	• English, informed consents, etc. • Something that do not need to be reviewed again by previous reviewers after revision.

Scoring system for the quality of review (0~100)

The score awarded to you by the Associate Editor puts your review into the (inferior, mid, superior) category.

1. Did the reviewer clearly identify the strengths? 0~20
2. Did the reviewer clearly identify the weaknesses? 0~20
3. Were the reviewer's comments constructive? 0~20
4. What was the level of detail of the review? 0~20
5. Was the reviewer biased? 0~10
6. Did the reviewers make distinct comments to the editors explaining why they recommended their decision? 0~10

GIE Reviewer's course

- 39 slides
- Learn from other reviewers' comments.
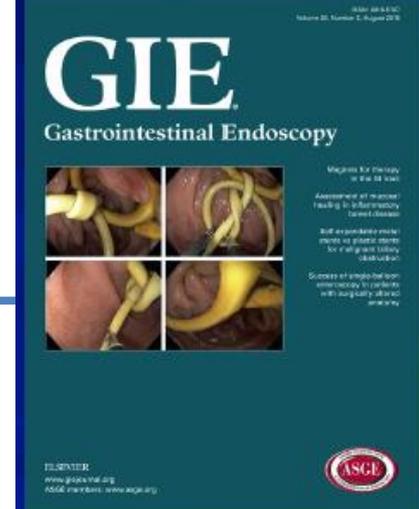
Congratulations! You have completed the *GIE* Reviewers' Course.

Time to take the test!

Please click on the link below to complete a brief test.

http://www.zoomerang.com/survey.zgi?p=WEB22683S6L2B3

A good peer review

1. Constructive comments

2. Details of the review

3. Rational decision making

Tips on approaching

Review from the backward to save time.

1. Title and Abstract
2. Figures and Tables
3. Results and Methods
4. Discussion and Introduction
5. Others (cover letter, supplementary material..)

- Understand that the readers want to read less, whereas the authors want to publish more.

Title

- Include topics, subjects, and/or study design
- Wise to mention if it is a randomized controlled trial, prospective study, case-control study, multicenter study..
- Avoid using "Analysis of ~, Investigation of ~, A study of ~", "Novel", "New", or abbreviations.

Neurogastroenterology & Motility

N G M

Neurogastroenterol Motil (2016) 28, 1401–1408

doi: 10.1111/nmo.12841

A prospective study on symptom generation according to spicy food intake and TRPV1 genotypes in functional dyspepsia patients

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Lee SY et al. Neurogastroenterol Motil 2016;28:1401-8

Abstract

1. Background (present tense) & Aims (past tense): Write in 2~3 sentences.

BACKGROUND: Capsaicin is an ingredient of red peppers that binds to transient receptor potential vanilloid subtype 1 (TRPV1), and Koreans eat more capsaicin-rich food than do Japanese. This study aimed to compare symptom generation according to TRPV1 genotypes and the

2. Methods (past tense): Describe about the study design and subjects in 3~4 sentences.

METHODS: Consecutive functional dyspepsia (FD) patients who were evaluated at Konkuk University Medical Centre (Korea) and Keio University Hospital (Japan) were included. Questionnaires on spicy food intake, patient assessment of gastrointestinal symptoms (PAGI-SYM), patient assessment of quality of life, and hospital anxiety and depression scale were provided. Blood was sampled for the detection of TRPV1 polymorphisms, and upper gastrointestinal endoscopy was performed with biopsies.

3. Results (past tense): Show the quantitative data with significant *p*-values in 3~4 sentences.

KEY RESULTS: Of 121 included subjects, 35 and 28 carried the TRPV1 CC and GG genotypes, respectively, with the prevalence rates not differing between Japan and Korea. The prevalence of FD subtypes did not differ with the spicy food intake, TRPV1 genotypes, or Helicobacter pylori infection. Neither TRPV1 polymorphisms nor H. pylori infections were related to scores on the PAGI-SYM questionnaires, but spicy food intake was positively correlated with the scores for stomach fullness (p = 0.001) and retching (p = 0.001). Using the linear regression analysis, stomach fullness was associated with spicy food intake (p = 0.007), whereas retching was related to younger age (p <

4. Conclusions (present > past tense): Tell what the study finding means in 1~3 sentences.

CONCLUSIONS & INFERENCES: Upper gastrointestinal symptoms are more common in subjects with a higher consumption of spicy foods, younger age and female gender, regardless of TRPV1 genotypes and the H. pylori infection status. Capsaicin-rich foods may induce stomach fullness.

Use tentative words (may, might, seem, could..) rather than definite words.
Avoid using "Further studies are required to~".

A prospective study on symptom generation according to spicy food intake and TRPV1 genotypes in functional dyspepsia patients.

1. The title is related to the journal.

2. The title includes novel finding.

Lee SY[1], Masaoka T[2], Han HS[3], Matsuzaki J[2], Hong MJ[1], Fukuhara S[2], Choi HS[1], Suzuki H[2,4].

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Abstract

BACKGROUND: Capsaicin is an ingredient of red peppers that binds to transient receptor potential vanilloid subtype 1 (TRPV1), and Koreans eat more capsaicin-rich food than do Japanese. This study aimed to compare symptom generation according to TRPV1 genotypes and the intake of spicy foods.

3. Study aim is clear and concise.

METHODS: Consecutive functional dyspepsia (FD) patients who were evaluated at Konkuk University Medical Centre (Korea) and Keio University Hospital (Japan) were included. [symptoms (PAGI-SYM), patient assessment of quality of life,] for the detection of TRPV1 polymorphisms, and upper gastrointestinal endoscopy was performed with biopsies.

4. Study subjects are mentioned in the method.

KEY RESULTS: Of 121 included subjects, 35 and 28 carried the TRPV1 CC and GG genotypes, respectively, with the prevalence rates not differing between Japan and Korea. The prevalence of FD subtypes did not differ with the spicy food intake, TRPV1 genotypes, or Helicobacter pylori infection. Neither TRPV1 polymorphisms nor H. pylori infections were related to scores on the PAGI-SYM questionnaires, but spicy food intake was positively correlated with the scores for stomach fullness (p = 0.001) and retching (p = 0.001). Using the linear regression analysis stomach fullness was associated with spicy food intake (p = 0.007), whereas retching was related to younger age (p < 0.001) and female gender.

5. Study findings justify the conclusions.

CONCLUSIONS & INFERENCES: Upper gastrointestinal symptoms are more common in subjects with a higher consumption of spicy foods, younger age and female gender regardless of TRPV1 genotypes and the H. pylori infection status. Capsaicin-rich foods may induce stomach fullness.

6. Conclusions answer the study question.

**7. The study aim, methods, results, and conclusions are connected.**

Figures and Tables

	Text	Table	Graph	Illustration
Content	+ + +	+ + + +	+ +	+
Precision	+ + +	+ + +	+ +	+
Impact	+	+ +	+ + + +	+ + +
Interest	+	+ +	+ + +	+ + + +

- Ideal number of tables& figures: 3~7
- Table 1. Demographic data
- Figure 1. Study flow
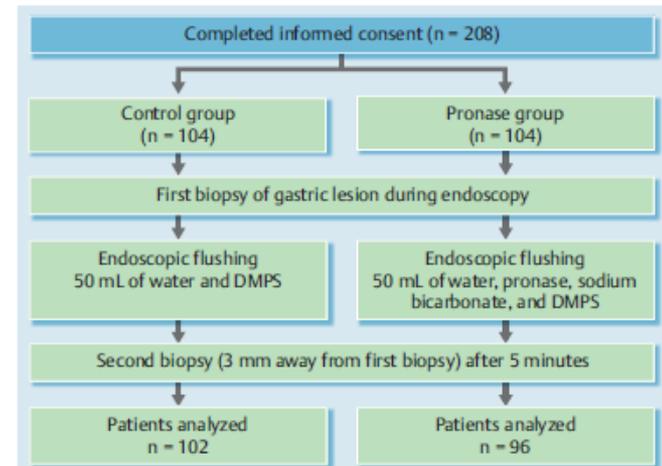
Fig.1 Study flow of patients. Of the 208 patients enrolled, 102 in the

Messinger-Rapport BJ et al. J Am Med Dir Assoc 2008;9:4-8
Lee SY, et al. Endoscopy 2014;46:747-53

Results

- Check subheadings in orders written in the Methods.
- Check actual quantitative data and *p*-values
- Recommend changing long sentences to tables or figures
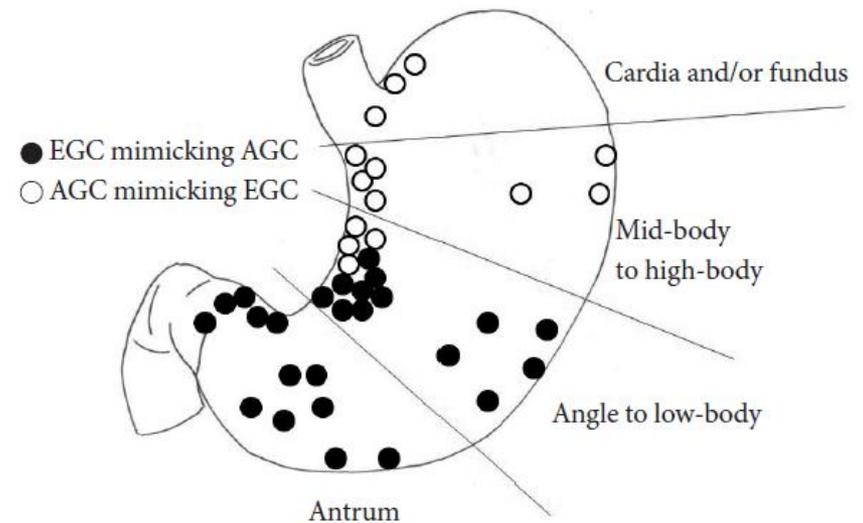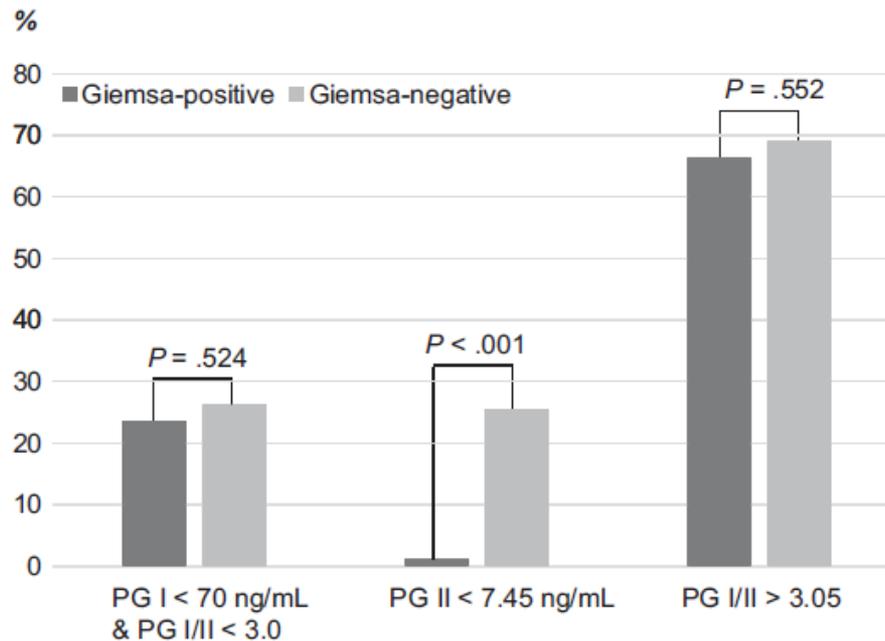
Kim JH, Lee SY et al. Helicobacter 2018;23:e12480
Park HS, Lee SY et al. Clin Endosc 2013;46:155-60

Methods

- Study design
- Subjects (inclusion and exclusion criteria)
- Informed consents and IRB approval
- Intervention and outcome measures
- Statistical analysis

$$N = \frac{2^2(1.96 + 0.84)^2}{\delta^2}$$ Sample size calculation

In this formula, δ is the mean SE of the ulcer size at 4 weeks after EMR, which manifests the statistically insignificant maximum ulcer size in the clinical situation. If the mean ulcer size for the 1-week group is no greater than δ compared with that of the OMP 4-week group, then the

treatment efficacy for the 1-week group is not inferior to that of 4-week group. By estimating the follow-up loss as 10% of those initially enrolled, the required group size could be calculated by using N/0.9.[12] Therefore, a decision was made to enroll more than 15 patients in each group.

Figure in Methods section
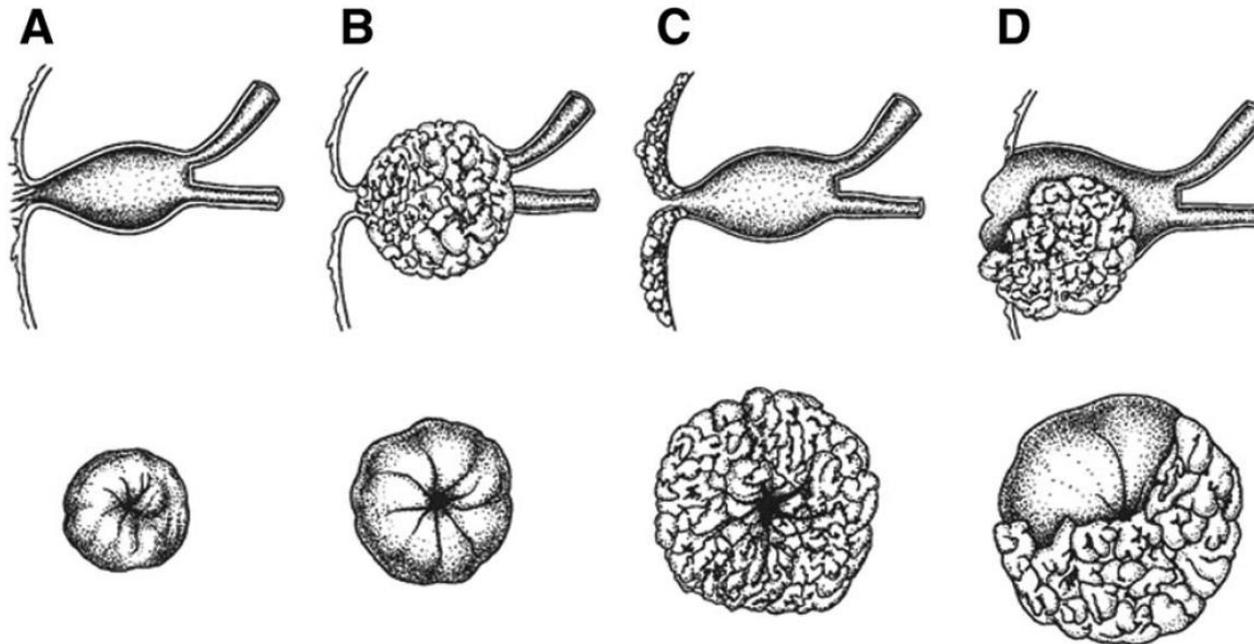
Figure 1. Schematic figures of gross classification for ampullary carcinomas (from Ref. 13). **A,** Normal: there is no tumor on ampulla. **B,** Intra-ampullary type: tumors are confined within the ampulla and do not involve the overlying duodenal mucosa of the papilla. **C,** Periampullary type: tumors involve the papillary duodenal mucosa, but they do not extend into the ampulla. **D,** Mixed type: tumors exhibit features of both.

Lee SY et al. Gastrointest Endosc 2006;63:783-8

Introduction

- Three ~ four paragraphs

1. 1st paragraph: Widely known fact → Tell a story
2. 2nd paragraph: Unproven findings → Hook the reader
3. Last paragraph: List research questions, hypothesis, and study aims. → Ask a question

Avoid

- Copy and paste (plagiarism)
- Personal pronouns: "I", "You", *etc.*
- Contractions: "isn't", "wasn't", *etc.*

Figure in Introduction section

Lee SY, Yoshida N et al. Gut Liver 2017;11:383-91
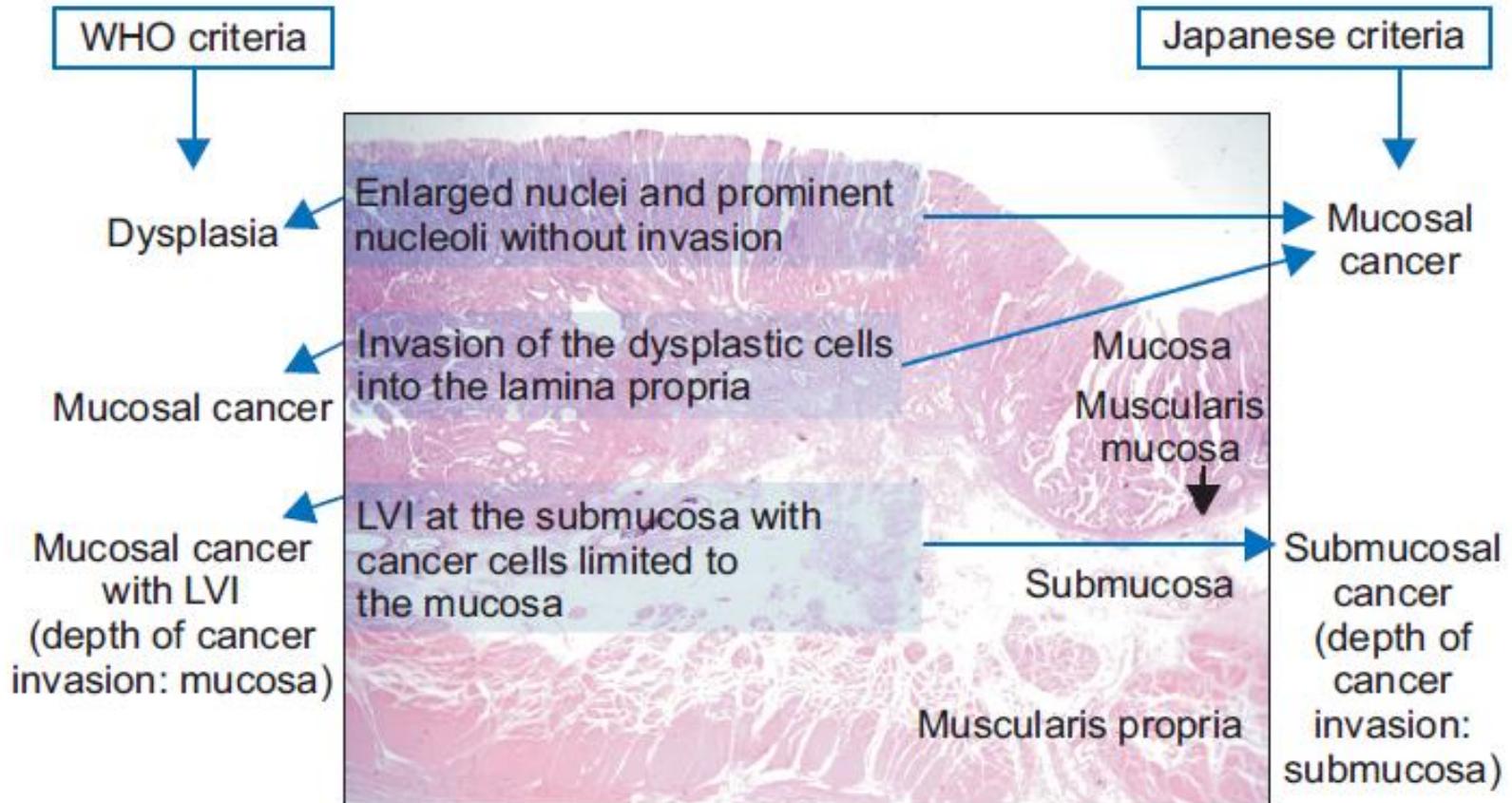
Discussion

- <u>1st paragraph</u>: Summarize the study findings
- <u>2nd~ paragraph</u>: Document and analyze the findings.
- Limitation of the study
- <u>Last paragraph</u>: Provide main conclusions with implication.

Is the study finding novel?

Yes

No

- Emphasize what is new and significant
- Synthesize information
- Make a point to persuade the readers

- Compare with relevant studies
- Address both sides of an argument(strength & weakness)
- Use details to prove the thesis and to control arguments

A good peer review

1. Constructive comments

2. Details of the review

3. Rational decision making

Comments to the Editors

Reviewer Blind Comments to Author

Insert Special Character | Open in New Window

Reviewer Confidential Comments to Editor

Insert Special Character | Open in New Window

CONFIDENTIAL COMMENTS TO EDITOR

- ≤ 200 word counts
- Explain about your decision (Accept, Revision, Reject..)
- Something private: ethics, conflict of interest, plagiarism..

Cancel | Save & Submit Later | Proof & Print | Proceed

Types of peer review bias

1. **Publication bias**: tendency to accept positive outcomes
2. **Confirmation bias**: dislike study against current knowledge
3. **Conservatism**: bias against innovative research
4. **Cognitive cronyism**: favor study showing similar thought
5. **Ego bias**: prefer studies that cite their own work
6. **Conflicts of interest**: inappropriate judgment to competing idea or personally disliked investigator
7. **Bias against interdisciplinary research**: unfair evaluation owing to different weighing

Manchikanti L et al. Pain Physician 2015;18:1-14

Mathew's effect

- More will be given to those who have.

- More shall be taken away from those who do not have.

<u>Old-boy network:</u>

1. Institution
2. Age
3. Gender
4. Grant
5. Clique (faction)

Fate of rejected manuscripts

Study[†]	Therapeutic Area	Rejected Manuscripts, No.	Rejected Manuscripts Subsequently Published in Other Journals, No. (%)	Publication Delay
Hall and Wilcox, 2007[3]	Epidemiology	155	116 (75)	Most published within 19 mo
Mundy, 1984[18]	General medicine	113	82 (73)	Most published within 23 mo
Koch-Weser and Yankauer, 1993[19]	Public health	83	60 (72)	Most published within 30 mo
Ray et al, 2000[20]	General medicine	350	240 (69)	Mean time from rejection to publication elsewhere was 18 mo (minimum, 4 mo; maximum, 60 mo)
Chew, 1991[1]	Diagnostic radiology	254	162 (64)	Mean time from rejection to publication elsewhere was 15 mo (minimum, 2 mo; maximum, 38 mo)
McDonald et al, 2007[8]	Radiology	554	304 (55)	Mean time from rejection to publication elsewhere was 16 mo (minimum, 1 mo; maximum, 37 mo)
Nemery, 2001[12]	Occupational and environmental medicine	405	218 (54)	Most published within 24 mo
Liesegang et al, 2007[7]	Ophthalmology	1344	686 (51)	Most published within 24 mo (median, 15 mo; minimum, 0.4 mo; maximum, 39 mo)
Opthof et al, 2000[13]	Cardiovascular	644	301 (47)	Most published within 36 mo
Armstrong et al, 2008[11]	Dermatology	489	201 (41)	Most published within 28 mo
Green and Del Mar, 2006[6]	General medicine	11	3 (27)	Not reported

Woolley KL et al. Chest 2009;135:573-7

Trends of publication

Novel topic

| Case reports | | Review articles |
| Letters to the Editor | | Meta-analysis papers |

Original articles ("Me too" papers)

Landmark papers (High citation)
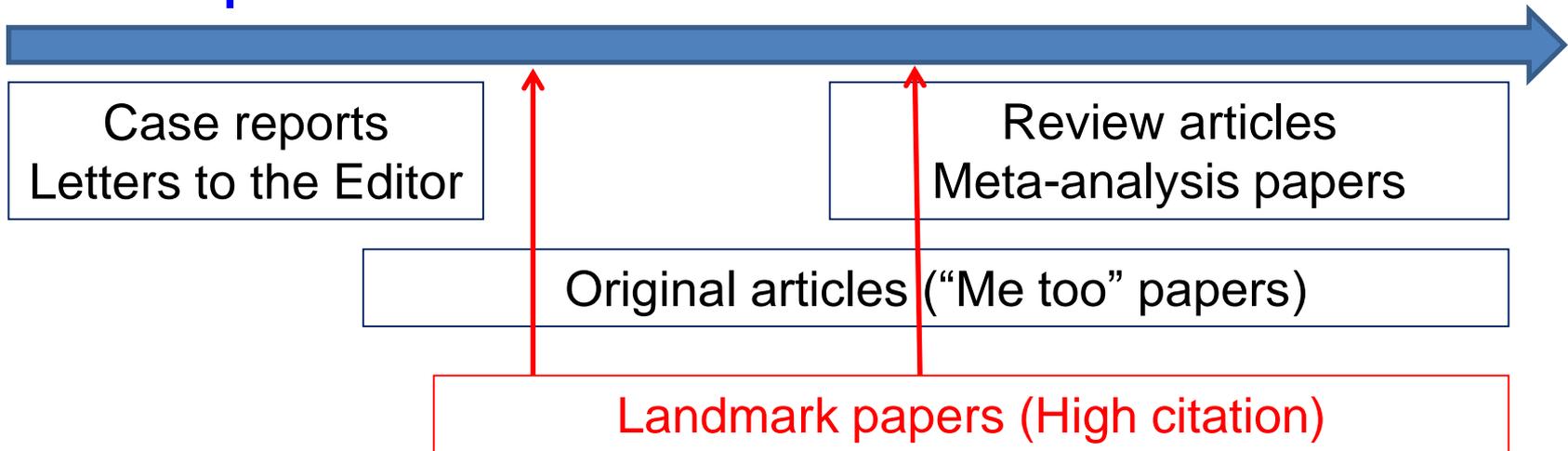
	Good reviewer	**Bad reviewer**
Accepted manuscripts	High citation (comments requiring revision)	Low citation (almost no revision)
Rejected manuscripts	Rarely published in other journals	Sometimes published in high-impact journals

Trends of citation

	Difficult procedure	Easy procedure
Wide application	Endoscopic submucosal dissection, Endoscopic sphincterotomy	Endoscopic mucosal resection, Colon polypectomy, Hemostasis **Increase**
Narrow application	Peroral endoscopic myotomy, Natural orifice transluminal endoscopic surgery **Decrease**	Endoscopic papillectomy

Checking lists

1. Title: topic + subjects + study design
2. Abstract
    ① **Background/Aims**: study questions
    ② **Methods**: subjects and important tools (procedures)
    ③ **Results**: quantitative data with statistical evidence (*p*-values)
    ④ **Conclusions**: meaning of the study findings
3. Main body
    ① **Introduction**: aims and hypothesis (last paragraph)
    ② **Methods**: statistical analysis (last paragraph)
    ③ **Results**: summarize in tables and figures (3~7 per article)
    ④ **Discussion**: document the study findings (all paragraphs)

Take home messages

Constructive comments:

- Be optimistic to provide a solution.

- Learn from other reviewers.

Details of the review:

- Identify strength and weakness of each section.

- Understand that the readers want to read less, whereas the authors want to publish more.

Rational decision making:

- Check feedbacks after publication.

- Read, write, and review frequently.