

# Graphical Abstract

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# 저널의 구조

- **IMRAD 형식**

- Introduction : 어떤 문제(질문)를 연구했는가?
- Method : 문제는 어떻게 연구되었는가?
- Result : 결과는 무엇이었는가?
- Discussion : 이 결과들의 의미는 무엇인가?

- 19세기 후반부터 이러한 형식이 갖추어지기 시작
- 저널의 편집자들은 연구 결과들을 상호 의사소통하기 위한 가장 간단하고 가장 논리적인 방법으로 확신

# What is an Abstract ?

- Short summary of completed research
- Description of research without going into great detail
- Abstracts should be;
  - **Self-contained** and concise
  - Explaining your work as briefly and clearly as possible

# Abstract format: Structured Vs. Unstructured

A population-based case-control study was conducted in Connecticut in 1996–2002 to test the hypothesis that lifetime hair-coloring product use increases non-Hodgkin's lymphoma risk. A total of 601 histologically confirmed incident female cases and 717 population-based controls were included in the study. An increased risk of non-Hodgkin's lymphoma was observed among women who reported use of hair-coloring products before 1980 (odds ratio = 1.3, 95% confidence interval (CI): 1.0, 1.8). The odds ratios were 2.1 (95% CI: 1.0, 4.0) for those using darker permanent hair-coloring products for more than 25 years and 1.7 (95% CI: 1.0, 2.8) for those who had more than 200 applications. Follicular type, B-cell, and low-grade lymphoma generally showed an increased risk. On the other hand, the authors found no increased risk of non-Hodgkin's lymphoma overall and by subtype of exposure and disease among women who started using hair-coloring products in 1980 or later. It is currently unknown why an increased risk of non-Hodgkin's lymphoma was found only among women who started using hair-coloring products before 1980. Further studies are warranted to show whether the observed association reflects the change in hair dye formula contents during the past two decades or indicates that recent users are still in their induction and latent periods.

case-control studies; Connecticut; hair dyes; lymphoma, non-Hodgkin; risk factors; women

(American Journal of Epidemiology)

## **ABSTRACT**

### **OBJECTIVE**

To assess inequities in mortality by race and sex for eight common surgical procedures (elective and non-elective) across specialties in the United States.

### **DESIGN**

Retrospective cohort study.

### **SETTING**

US, 2016-18.

### **PARTICIPANTS**

1 868 036 Black and White Medicare beneficiaries aged 65-99 years undergoing one of eight common surgeries: repair of abdominal aortic aneurysm, appendectomy, cholecystectomy, colectomy, coronary artery bypass surgery, hip replacement, knee replacement, and lung resection.

### **MAIN OUTCOME MEASURE**

The main outcome measure was 30 day mortality, defined as death during hospital admission or within 30 days of the surgical procedure.

### **RESULTS**

Postoperative mortality overall was higher in Black men (1698 deaths, adjusted mortality rate 3.05%, 95% confidence interval 2.85% to 3.24%) compared with White men (21 833 deaths, 2.69%, 2.65% to 2.73%), White women (21 847 deaths, 2.38%, 2.35% to 2.41%), and Black women (1631 deaths, 2.18%, 2.04% to 2.31%), after adjusting for potential confounders. A similar pattern was found for elective surgeries, with Black men showing a higher adjusted mortality (393 deaths, 1.30%, 1.14% to 1.46%) compared with White men (5650 deaths, 0.85%, 0.83% to 0.88%), White women (4615 deaths, 0.82%, 0.80% to 0.84%), and Black women (359 deaths, 0.79%, 0.70% to 0.88%). This 0.45 percentage point difference implies that mortality after elective procedures was 50% higher in Black men compared

with White men. For non-elective surgeries, however, mortality did not differ between Black men and White men (1305 deaths, 6.69%, 6.26% to 7.11%; and 16 183 deaths, 7.03%, 6.92% to 7.14%, respectively), although mortality was lower for White women and Black women (17 232 deaths, 6.12%, 6.02% to 6.21%; and 1272 deaths, 5.29%, 4.93% to 5.64%, respectively). These differences in mortality appeared within seven days after surgery and persisted for up to 60 days after surgery.

### **CONCLUSIONS**

Postoperative mortality overall was higher among Black men compared with White men, White women, and Black women. These findings highlight the need to understand better the unique challenges Black men who require surgery face.

(British Medical Journal)

# Abstract : ICMJE

- Structured abstract: OA, SR, and meta-analyses
- Abstract should state;
  - Study's purpose, basic procedures (selection of study participants, settings, measurements, analytical methods)
  - Main findings (giving specific effect sizes and their statistical and clinical significance, if possible), and principal conclusions.
  - Emphasize new and important aspects of the study or observations, note important limitations
- Clinical trial abstracts: CONSORT statement
- Funding sources and clinical trial registration number

# Graphical (or Visual) Abstract : History

Leading Edge  
Editorial

Cell

## 2010: A Publishing Odyssey

With this first issue of the year, *Cell* launches a new format for online presentation of all research articles. This "Article of the Future" initiative reflects our commitment to evolve the concept of a scientific publication in step with the development of new technologies and functionalities both now and into the future.

The first print issue of *Cell* in 1974 established a highly recognizable format and presentation, and this *Cell* "look" has remained largely unchanged in the intervening years. The transition to online publishing in the mid-1990s brought many new opportunities for scientific journals. It revolutionized searchability and information discovery, dramatically increased the breadth and ease of access, and allowed for the inclusion and distribution of online supplemental materials such as movies and large datasets that could not be captured in print. In addition, many journals, *Cell* among them, took advantage of online technologies to add new functionalities around the core article, including commenting features and related citations links. But few have tackled the issue of how best to bring the powers of the new technologies to bear on the structure, organization, and presentation of the article itself. Thus, for most journals the online article of today remains essentially an electronic facsimile of the traditional print article.

Over the past year, *Cell* has taken this challenge to heart. In conjunction with our authors and readers, we have worked to develop an online format that breaks free from the restraints of paper and allows each reader to create a personalized path through the article's content based on his or her own interests and needs. Underlying the "Article of the Future" is a new approach to structuring the traditional sections of the article, moving away from a strictly linear organization required by print toward a more integrated and linked structure. Tabbed and hyperlinked navigation through the Introduction, Results, Figures, Experimental Procedures, and Discussion allows subject-area experts to quickly access in-depth information on a particular experi-

ment while providing more general readers an opportunity to absorb the conceptual insights without being overwhelmed by additional details.

Within this overall architecture are a number of exciting functionalities. For example, the Data tab, a film strip of thumbnails for all of the figures in the paper (including supplemental figures), allows a reader to rapidly scan through the data and then connect from an individual figure to the related textual discussion of the findings. The Results tab lets the reader view a zoomable figure, the legend, and associated Results text easily on a single screen.

Highlights and a Graphical Abstract on the landing page of each article complement the traditional Summary text and promote article browsing by creating a visual summary and bullet points that easily convey the main take-home message of the paper.

And the online display fully integrates supplemental information including multimedia content within the context of the main article and facilitates more fluid navigation between the two. Of course if you prefer to read the classic version, it remains accessible as a printable PDF with options to view and print either the core paper or the core paper plus supplemental information.

As with any new initiative, moving a concept through an experimental prototype to a fully scaleable production version takes the collaborative efforts of many. We would like to thank the readers who provided valuable, constructive, and encouraging feedback on the prototypes and the authors in the first few issues of this year for their enthusiasm and forbearance in working with us to bring this new format to fruition. We are tremendously excited by the new opportunities that the "Article of the Future" initiative brings to our authors and readers, and as the name implies, we seek to continually evolve and improve how our articles are presented online to best serve the needs of the scientific community. So we invite you to fully explore the HTML versions of the articles in this issue and welcome your feedback at [article2010@cell.com](mailto:article2010@cell.com). Best wishes for a happy, healthy, and productive new year from everyone at *Cell*!

Emilie Marcus

Marcus, E. *Cell* **140**, 9 (2010)

## The art of abstracts

Including pictorial summaries of each article on the table-of-contents page that little bit easier to browse — rather than search — the scientific literature

The concept of a graphical abstract — a visual summary of a scientific paper that appears on a journal's table of contents (TOC) — will probably be familiar to most of the readers of this Editorial. Such images are commonplace in both the print and online TOC pages of many chemistry journals. In other disciplines, however, the graphical abstract is a much rarer phenomenon.

Consider, for example, the *Nature* journals — only *Nature Chemical Biology* and *Nature Chemistry* feature graphical abstracts. The other journals typically adorn the print/PDF versions of their TOC pages with eye-catching images associated with just a few of the papers in any given issue, but these pictures are there more for reasons of page design than anything else — after all, they are nowhere to be found in the online TOCs. Similarly, looking further afield at high-profile journals such as *Science* and *PNAS* also reveals a lack of graphical abstracts. It seems that outside of chemistry-specific publications, online TOC pages consist of row-upon-row of text — titles, author lists, publication dates and links.

With scientific publishers constantly striving to make the most of web technologies in their effort to present scholarly articles in new and innovative ways to their readers, the graphical abstract might be about to go mainstream. The Editorial in the first issue of *Cell* in 2010 announced<sup>1</sup> their "Article of the Future" concept, describing changes in how research articles would be presented online — and this included the introduction of graphical abstracts. Other journals are also getting in on the act and there have been some positive responses<sup>2,3</sup> in the blogosphere.

Far from being driven by the rise of the internet and the opportunities it affords

more formal — and somewhat staid — unchanging covers for many years and took their time to catch up with these publishing innovations, in what was (and some would say still is) a conservative industry.

*Tetrahedron Letters* introduced graphical abstracts in 1986, back in the days when articles could be published in English, French or German, and a large part of the front cover of the journal was devoted to the text-only version of the TOC. It wasn't until 1994 that graphical abstracts graced the pages of *Chemical Communications*, and readers of the *Journal of the American Chemical Society (JACS)* had to wait until 2002 before being presented with them.

A graphical abstract should be eye-catching and relatively simple to interpret.

Perhaps it is no surprise that chemistry embraced the graphical abstract so ardently — and did so before many other fields — because it is such a visual subject. In particular, much of chemistry, especially the organic and inorganic sub-disciplines, relates to structure. Taking just one example, the total synthesis of a natural product can come alive through an illustration of the target compound and some of the key intermediates; compare that with a 15-word title and a 100-or-so-word abstract trying to describe the same thing. In fact, depending on the complexity of the natural product in question, it might take most of those 100 words to just adequately describe its structure. In some cases a picture really is worth 1,000 words.

The art of abstracts. *Nature Chem* **3**, 571 (2011)

# Why do you need a Graphical Abstract

- A graphical abstract gives **VISIBILITY**
  - ✓ It is like an advert for your paper
  - ✓ It offers a way in to discover your research
  - ✓ It is a way to spark curiosity
  - ✓ It improves the social reach of new scientific publications
  - ✓ It helps to widen the impact of your research
- A graphical abstract creates a unique **OPPORTUNITY**
  - ✓ to stand out from the crowd
  - ✓ to help readers identify relevant papers
  - ✓ to effectively communicate science
  - ✓ to contribute to the advancement of science

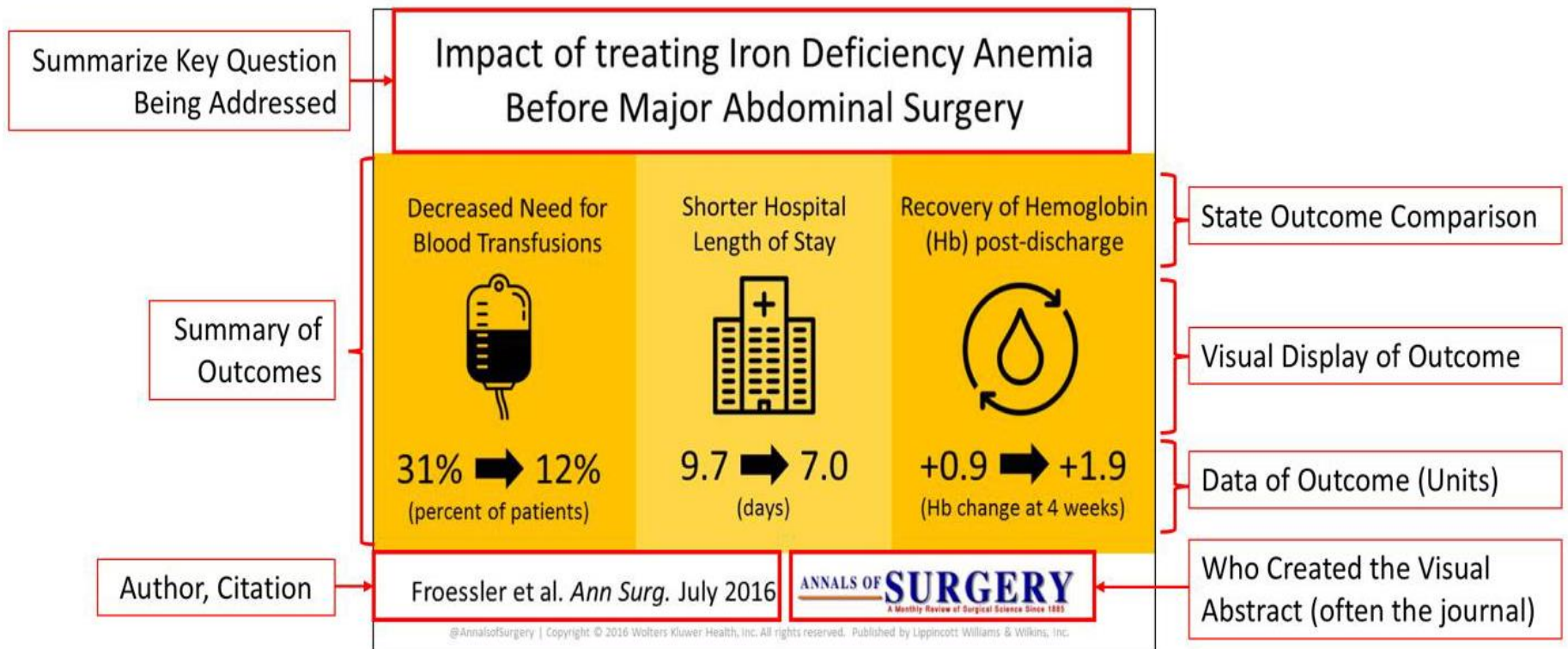


# What is a Graphical Abstract?

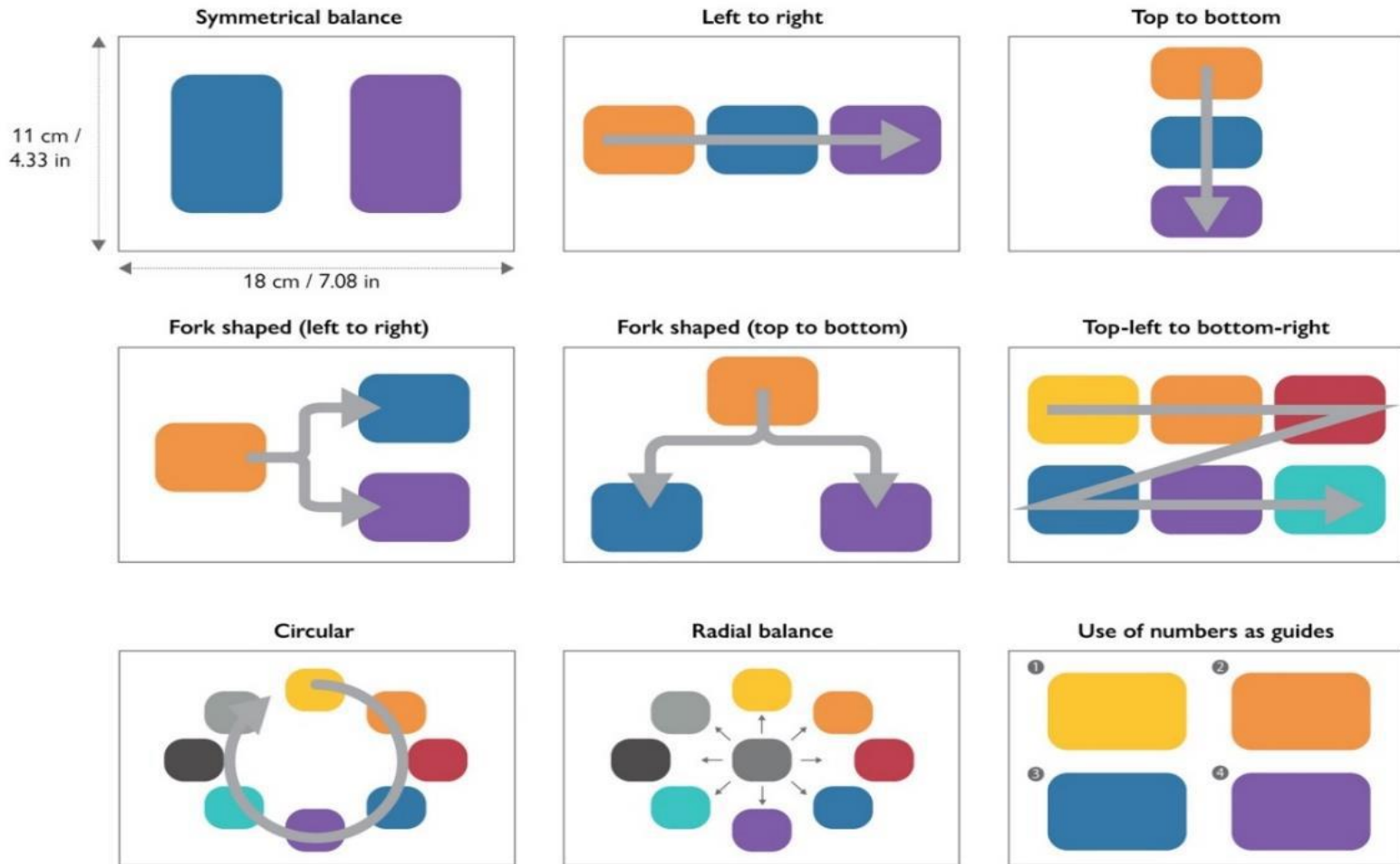
- A graphical abstract
  - ✓ a visual summary of your manuscript and its main finding(s)
  - ✓ immediate understanding of the key message of the paper at a single glance.
- A graphical abstract should:
  - ✓ Be a newly designed and unique figure
  - ✓ Have a clear start and end, preferably "reading" from top-to-bottom or left-to-right
  - ✓ Summarize the main message of the manuscript focusing on the new findings of the research
  - ✓ Not include excess details from published literature or conclusions/data that are more speculative

# Components of an Effective Graphical Abstract

“ Visual summary of the information contained in the abstract.”



# Graphical Abstract: Design



# Steps in Creating a Graphical Abstract

1. Select the article
2. Read the article and identify the following:
  - a. What is the study design? Retrospective cohort? Randomized controlled trial? Case-control study?
  - b. Describe the cohort. The N, key characteristics, inclusion/exclusion criteria
  - c. What is the intervention?
  - d. What are the outcomes? Primary outcome and noteworthy secondary outcomes
3. Build the slide
  - a. Use a program such as Microsoft Powerpoint (Microsoft Corp, Redmond, WA) or Keynote (Apple Inc, Cupertino, CA)
  - b. Divide slide into sections: title, methods/cohort, results, conclusions
  - c. Choose the slide color scheme and add colored panels
  - d. Choose icons for each of the key components of the study: the cohort, the intervention, the outcomes; use an image repository such as Noun Project ([thenounproject.com](http://thenounproject.com)) or Iconfinder ([iconfinder.com](http://iconfinder.com)) as the source for icons; ensure copyright permission has been obtained
  - e. Add the pertinent data for each of the sections using text boxes; pay attention to alignment and justification
  - f. Include the citation of the article
4. Share the draft with others to get feedback
5. Save the final version as a picture image

# Graphical Abstract: Do and Don't

- Do

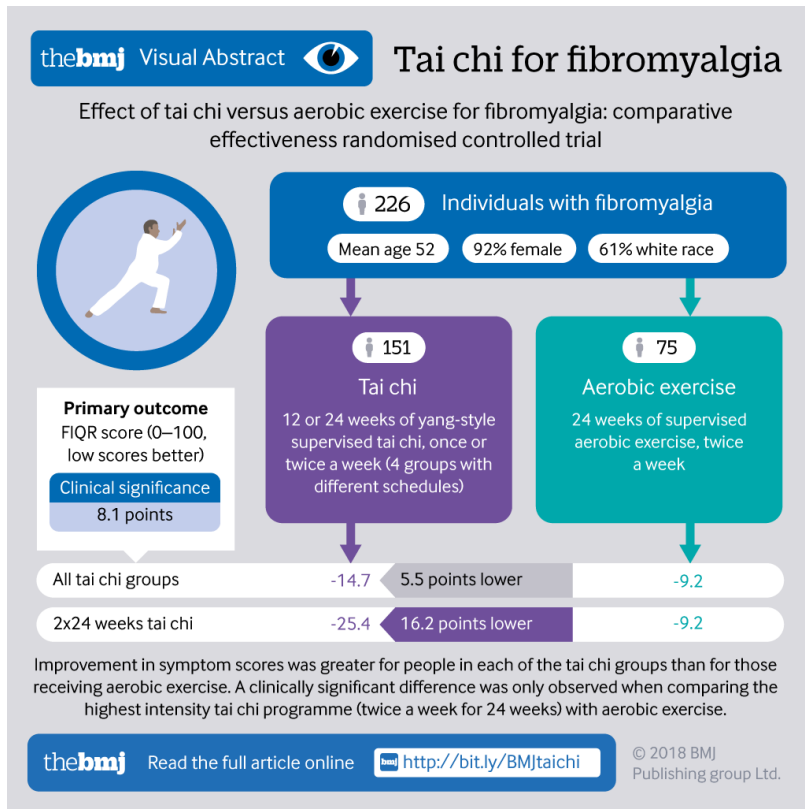
- ✓ Remove details without changing the conclusions
- ✓ Draw the narrowest, most limited, conclusions from the data
- ✓ Use easy-to-read and appropriately sized font
- ✓ Use the journal's template, if applicable
- ✓ Save the image in high resolution
- ✓ Ask for feedback from others
- ✓ Include the visual abstract creator's name and Twitter handle

- Don't

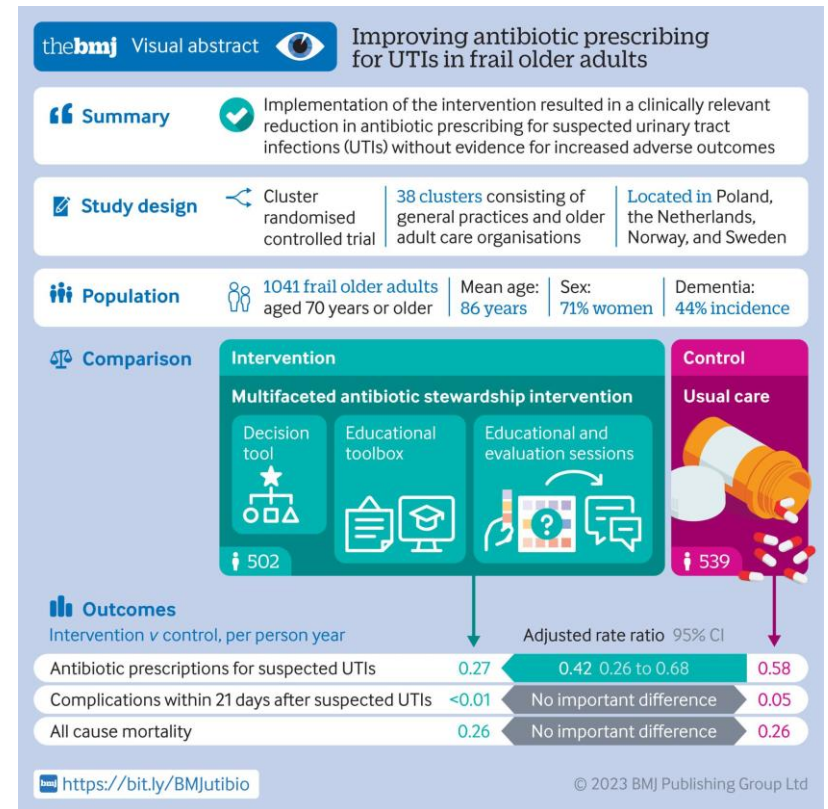
- ✓ Use icons or graphics without permission or user rights
- ✓ Attempt to include all of the study's findings
- ✓ Add an interpretation of the study's findings
- ✓ Use the journal's logo if the visual abstract is not sponsored by the journal

# Visual Abstract (or Graphical abstract): BMJ

2018

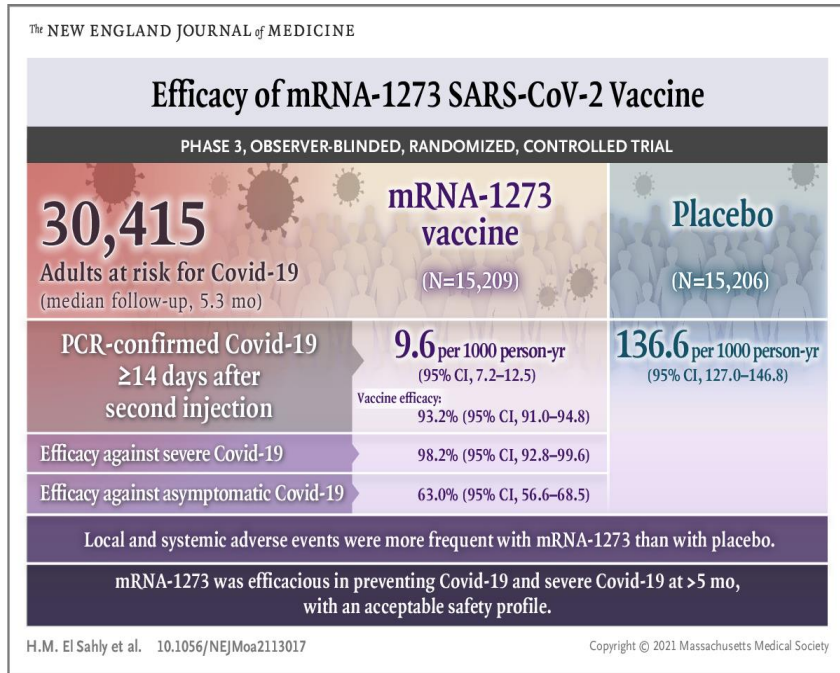


2023





# Visual Abstract and Research Summary: NEJM



## RESEARCH SUMMARY

### Nirogacestat, a $\gamma$ -Secretase Inhibitor for Desmoid Tumors

Gounder M et al. DOI: 10.1056/NEJMoa2210140

#### CLINICAL PROBLEM

Desmoid tumors — rare, nonmetastatic, mesenchymal tumors — are locally aggressive and invasive, conferring substantial morbidity. No therapies are currently approved for their treatment. Nirogacestat, a selective  $\gamma$ -secretase inhibitor, has shown promising antitumor activity in early trials involving patients with desmoid tumors, but additional data are needed.

#### CLINICAL TRIAL

**Design:** A phase 3, international, double-blind, randomized, placebo-controlled trial assessed the efficacy and safety of nirogacestat in adults with progressing desmoid tumors.

**Intervention:** 142 patients  $\geq 18$  years of age with either progressing tumors that had not been treated or refractory or recurrent tumors after  $\geq 1$  previous line of therapy were assigned to receive oral nirogacestat (150 mg) or placebo twice daily. The primary end point was progression-free survival.

#### RESULTS

**Efficacy:** During a median follow-up of 15.9 months, the risk of disease progression or death was 71% lower with nirogacestat than with placebo.

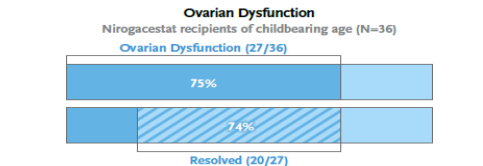
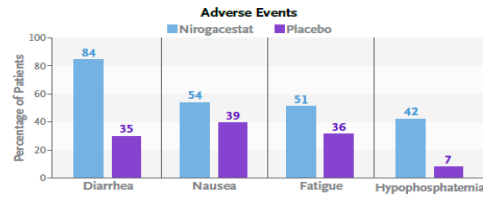
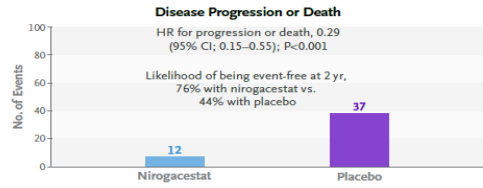
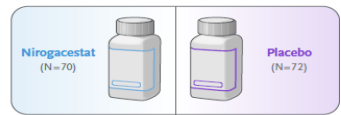
**Safety:** The most frequent adverse events with nirogacestat were diarrhea, nausea, fatigue, and hypophosphatemia. Ovarian dysfunction was common in women of childbearing age receiving nirogacestat but resolved in all the women who discontinued nirogacestat and in the majority who continued to receive it.

#### LIMITATIONS AND REMAINING QUESTIONS

- The appropriate duration of nirogacestat treatment is unknown.
- Further evaluation of ovarian dysfunction with nirogacestat is ongoing in the open-label extension phase of the trial.
- The efficacy of nirogacestat in children with desmoid tumors is unknown and under investigation.

Links: Full Article | NEJM Quick Take

#### Desmoid Tumors



#### CONCLUSIONS

In adults with progressing desmoid tumors, oral nirogacestat resulted in longer progression-free survival than placebo. Adverse events were frequent but mostly low grade.

# Graphical Abstract 문제점

- 공통된 GA의 양식 부재
  - 투고시 GA의 변경 필요: 제공하는 template가 다름
  - 저널마다 요구하는 내용이 다름
- 전문 인력의 부재
  - ✓ Illustrator의 의학 분야 지식을 요구
- 저널 출판 비용 및 시간의 증가



Thank you