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Common errors in medical journals and how to avoid them

Errores comunes en las revistas de difusión médica y cómo evitarlos

Guillermo Padrón-Arredondo*

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ABSTRACT

Introduction: scientific research and the publication of a scientific article are two closely related activities**.** A review was done on how to write a medical article related to writing errors and methodological evaluation errors used to analyze the results. Twenty-seven studies were consulted, using search words: writing, research, errors, cases, method, results, discussion, report, and study habits. The first thing observed when a paper is received for the publication is that most researchers omit the first page, which contains vital information for the control and follow-up of their work. The keywords need to be corrected, with grammatical, spelling, and writing errors, as well as a lack of adherence in the wording of the references, and the absence of a letter of assignment of rights, if applicable. In general, an original scientific article consists of the so-called IMRyD structured format, the initials of the entire article sections. The results and discussion are written in the wrong verb tenses. **Conclusions:** it is essential to comply with the Vancouver norms and the rules for authors of the journal to which the paper is sent.

RESUMEN

Introducción: *la investigación científica y la publicación del artículo científico son dos actividades íntimamente relacionadas. Se realizó una revisión acerca de cómo escribir un artículo médico relacionado con los errores de redacción y de evaluación metodológica utilizada en el análisis de los resultados. Fueron consultados 27 estudios, se utilizaron palabras de búsqueda como: redacción, investigación, errores, casos, método, resultados, discusión, informe y hábitos de estudio. Lo primero que se observa cuando se recibe un trabajo para posible publicación es que la mayoría de los investigadores omiten la primera página que contiene información vital para el control y seguimiento de su trabajo. Las palabras clave están mal en general con errores gramaticales, ortográficos y de redacción, además de una falta de apego en la redacción de las referencias, así como la ausencia de una carta de cesión de derechos, si fuera el caso. Por lo general, un artículo científico original consta del denominado formato estructurado IMRyD, que son las iniciales de los apartados fundamentales del artículo. Los resultados y la discusión se escriben en tiempos verbales equivocados.* ***Conclusiones:*** *es importante el cumplimiento de las normas de Vancouver, así como de las normas para autores de la revista a donde se envíe el trabajo.*

INTRODUCTION

Ruy Pérez Tamayo[1] has pointed out that the genuinely ethical physician: "must perform, to the best of his ability, the following three functions: 1) to care for health and combat disease, always promoting an optimal doctor-patient relationship; 2) to teach his knowledge to students, colleagues, patients, family members and all those who can benefit from it, and 3) to contribute to increasing knowledge through medical research".

Scientific research and the publication of scientific articles are two closely related activities. Scientific research ends with the publication of the scientific article; only then will it become part of scientific knowledge.

The publication of discoveries, research, and scientific advances is inherent to science.

* Research Department of the General Hospital Playa del Carmen.

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All experiments must be written down so other researchers can contrast, reproduce, and use them. If they were left only to oral transmission, the results would be inaccurate and ephemeral; they would be deformed and lost. A study that is not published is not visible to the scientific community and therefore does not exist.[2,3]

The three fundamental characteristics of medical language

What are the fundamental mistakes in medical language?

Like all scientific language, medical language does not pursue aesthetic, creative, playful, or recreational purposes -as could be the case with literary language-but informative, didactic, and communicative ones. For this reason, the three main features of scientific language in general, and of medical writing, are truthfulness, precision, and clarity; in other words, what is expressed in a scientific text should not be false, ambiguous, incomprehensible, shocking or cumbersome to read. The severe errors in medical language will go against any of these three essential features - truthfulness, precision, and clarity - that should characterize all scientific language.[4]

When a research paper is received in any biomedical journal, the editor decides whether it continues its evaluation course or is immediately rejected. The main reason for this first instance rejection is because the paper does not conform to the instructions for authors of that journal, starting with its presentation (the form). The objective of this review was to point out the errors in the medical writings, to point out the correct way to correct them and to ensure the work was accepted due to the poor quality of the writing and the methodology used in the results.

Review

A bibliographic review was carried out on how to write a medical article related to writing errors, and methodological evaluation was used to analyze the results. Twenty-seven studies were consulted that dealt with the subject in Spanish, as well as works related to how to write each of the sections of medical writing. Search words used were writing, research, errors, cases, method, results, discussion, report and study habits.

When a paper is received for possible publication, the first thing the editor notices is that some researchers omit the first page, which has vital information for the control and follow-up of their work, and should contain the following information: 1) short title (cornices) and name the first author followed by et al for the heading of the pages; 2) long title of the research, it should not be longer than 12 (exceptionally up to 15 words); 3) name of the author(s) in a traditional way [(name(s), last name(s)] with numerical superscript from lowest to highest, superscripts of each author if they are from different venues and their maximum academic degree maximum, without positions or headships in case the chosen journal requests it; 4) site(s) where the research originated; 5) address for correspondence of the researcher in charge of this responsibility (does not have to be the first author) and include postal address, telephone and e-mail; 6) attach a letter of assignment of rights in case the journal requires it.

When this first page needs to be included, the article is one step away from rejection

Table 1: Type of articles related to writing a medical article.

Keywords	n (%)
Editorial Staff	11 (39)
Writing and publishing	7 (25)
Error	3 (11)
Results	2 (7)
Title	1 (3)
Method	1 (3)
Discussion	1 (3)
Study habits	1 (3)
Report	1 (3)
Cases	1 (3)
Total	29 (100)

because there is no way to contact the author responsible for the correspondence.

The keywords (up to six) are presented *(Table 1)*. Since almost all authors do not differentiate between charts, tables, and figures, their meaning is presented *(Table 2)*. In the statistical results section, the presentation of the p-value is diverse, and the correct way to do it is shown *(Table 3)*. It should be remembered that in English-language journals, this changes, and even in Mexican journals written in English, the writing varies greatly.

Table 2: Differences between charts, table and figure.

Chart	Expression of numerical relationships, for which there are references or explanations in the text; the data should be arranged so that they can be read vertically
Table	Numerical expressions for which there are no references or explanations in the text, e.g., table of logarithms, and chemical tables, for example
Figure	Expression of images, photographs, maps, and statistical graphs

Source: Sánchez VA, Faulín FFJ, Martínez GMA. Estadística amigable. 2nd ed. Editorial Díaz de Santos, S.A. 2006.

Table 3: Errors in describing the p-value.

Error	Correct mode
$p < 0.000000001$	$p < 0.001$
$p = 0.000$	$p < 0.001$
$p = 0.0000$	$p < 0.0001$
$p = 0.0109567$	$p = 0.011$ or $p = 0.01$
n.s (or worse, p = n.s)	$p = 0.13$
$p > 0.05$	$p = 0.39$
$p < 0.05$	$p = 0.03$

Adapted from: Barton B, Peat J. Medical statistics. A guide to SPSS, data analysis, and critical appraisal; and APA: Publication Manual of the American Psychological Association.

Significant errors are varied from grammatical, spelling, and writing mistakes to non-compliance with the Vancouver norms, now *Recommendations of the International Committee of Editors of Biomedical Journals*, which governs almost all national and international medical journals. It is common to find in the references methods different from the Vancouver system, which compromises the medical writing because it generates excess work for correction in case the editorial department does it.[5]

Since the papers received suffer from major flaws, this section discusses the main sections with recommendations for improvement.

Authors

Who is the author? The International Committee of Medical Journal Editors (ICMJE) recommends that authorship should be based on the following four criteria: 1) substantial contributions to the conception or design of the work or the acquisition, analysis, or interpretation of data for the work; 2) drafting of the work or critical revision for important intellectual content; 3) final approval of the version to be published; and 4) agreement to be responsible for all aspects of the work to ensure that questions regarding the accuracy or integrity of any part of the work are adequately investigated and resolved. Failure to comply with these recommendations is a breach of professional ethics.[6]

Structure of a medical article

In general, the structure of an original scientific article consists of the so-called IMRyD format, which are the initials of the fundamental sections of the article: Introduction, Methods, Results, and Discussion, which is not an arbitrary publication format, but a direct reflection of the scientific research process that consists of posing a problem, defining a method, presenting the results, and discussing them. Conclusions are included in the discussion section. Other sections are not part of the IMRyD format but are nonetheless important, such as the title, information about the author,

abstract, keywords, acknowledgments, and list of references.[7]

The title

Jara[8] states that the title should have the following characteristics: be attractive to describe the article's content in a specific, clear, exact, brief, and concise way; enable the reader to identify the subject easily; allow precise indexing of the material. It should have a maximum of 15 words, and using subtitles, abbreviations, or acronyms is not allowed. Keep it brief and between 50 and 100 characters, but no more (shorter titles are more frequently cited).

Recommendation: do not use a colon in the title because the Internet does not recognize the symbol or accept copying titles when downloading references.

The summary (written in the past tense)

It should be no longer than 250 words and generally contain the following points: some journals accept up to 300 words and others up to 150 words, so the journal author's instructions to which the paper is to be submitted should be reviewed. The structured abstract is recommended (IMRyD), and an unstructured abstract can be accepted only in papers that do not require systematization.

Keywords (three to six)

The most significant difficulty was choosing the correct words that accurately defined the paper's main topic, many of which needed to be contained in the paper's title. Others did not appear in the Health Sciences Descriptor (DeCS). In addition, these keywords should be written in lowercase and separated by commas.

The Abstract

Generally, this section should be written in the *Summary* or *Abstract,* in good English as *Introduction,* and as *Background* in narrative reviews.

Keywords: in English. Many authors write this term like this: *Key words* which need to be corrected.

The introduction (written in the present tense).

Evans-Meza R and collaborators[9] mention some mistakes that can be made and that it is desirable to avoid, such as:

1. Ambitious, overly formal introductions, including endless speeches.
2. Exemplifying introductions or those with plenty of illustrative examples of the subject.
3. Historical introductions, where the historical account of the problem is abused.
4. Introduction solution, in which the results of the research are already announced.

Other authors[10-13] recommend that the introduction contain at least three paragraphs. The first should be devoted to a review of the literature on the topic to answer the question, "What do we know about it?" It should be limited only to what is related to the purpose of the study. Ensuring that the title's words are included in this space is necessary. The second paragraph should address the problem statement, particularly what we need to learn. The third paragraph should answer the objective of the problem, i.e., answer the question, "What do we want to find out?" The authors suggest using between 10 and 15 references for this part, depending on the type of article. I believe up to five references would suffice in this section.

Materials and methods (written in the past tense)

The technical specifications, exact quantities, and the origin or method of preparation must be included in the material section.

Sometimes it is even necessary to list the relevant chemical and physical properties of the reagents used. Trade names should be refrained from; generic or chemical names are usually preferred. This choice avoids the intrinsic advertising of trade names. In addition, the generic name is likely to be known worldwide, whereas the patented

name may be known only in the country of origin. However, if there are known differences between the patented products and those differences may be of critical importance (as is the case with some growing media), the trade name, with the manufacturer's name, will be essential. When trade names, usually registered trademarks, are used, they should be capitalized (Teflon®, for example) to distinguish them from generic names. The generic description should follow the trade name: Kleenex®, tissues.

In the case of methods, the usual order of presentation is chronological. Obviously, related methods should be described together, and a strict chronological sequence may not always be followed, e.g., if a particular test was not performed until late in the investigation, the corresponding method should be described at the same time as the other test methods and not in isolation in a later part of Material and Methods.[13-16]

Avoid

Common errors can make the manuscript uncomfortable to read or cause readers to question the validity of the research. The University of Southern California offers some recommendations:

1. Background information that is not useful should be avoided.
2. Authors should provide a manageable amount of detail.
3. Authors should focus more on how their method met their objective and less on the mechanics.
4. Describe all obstacles and how they were overcome (often included in the "study limitations"). This description will help validate the results.[17]

Writing the method can be tedious, but a well-written section can improve the chances of publication and strengthen conclusions. Good luck with the research![18]

Results (written in the past tense)

The aim is to describe in a general way all the information gathered in the research, organized in a logical sequence, with meridian clarity, without repetition of formats, employing charts (tables) that allow highlighting specific important values and figures (graphs) that help to visualize trends and associations—for the best achievement of these indications, using the mnemonic DECIR (describe, emphasize, complete, interpret, summarize). Use the verb in the past tense for the methods section, except when figures are mentioned.[19] A summary of the content of the results is presented in *Tables 1 to 3*.

Concerning illustrations, these will appear designated as figures for all graphic material: diagrams, drawings, schemes, graphs, photographs (of patients, anatomical pieces, radiographs, electrocardiograms, echocardiograms, ultrasonographic scans, for example). A frequent error is their designation,[20] in the text; they are mentioned as fig. or figs.

An excellent way to present the results is through tables, and the elaboration of these tables has its rules; the appropriate way to design a table is presented below, and the content depends on the results. It is recommended that the table's title be in the Arial font at 10 points, the content of the table at 9 points, and if there are many rows or columns at 8 points. The footnote font can be smaller than the text font (and have a different spacing). For example, using double spacing and 12-point Arial font in the text, a font size of 10 points and single spacing can be used.

A common error is that the results are presented as *tables* when they are charts (all English articles use the word *table* indistinctly), not using the word figure(s) in photographs, and maps, among others. *(Table 1)*.

The discussion (written in the present tense)

What is the discussion section? "The discussion is more difficult to define than the other sections of a scientific article. For this reason, it is also usually the most difficult section to write. Many articles are rejected by journal editors because of poor discussion,

even if the data in the paper are valid and interesting".

The discussion section is one of the most challenging sections of the scientific article. The following are some suggestions:

1. Begin the discussion with the answer to the initial question, followed immediately by the evidence set out in the results that corroborates it.
2. Write this section in the present tense ("these data indicate that...") because the paper's findings are already considered scientific evidence.
3. Include recommendations as appropriate; avoid drawing more interpretations than the results allow.
4. Interpret the data in the discussion and decide whether each hypothesis is supported or rejected; if a decision cannot be made, the researcher must postulate some possible explanations.
5. If the hypothesis still needs to be adequately tested, suggest how the experiment should be modified to achieve this.
6. Explain all observations as much as possible. When referring to the data, it is essential to distinguish the data the own study generated from the observations and publications of other authors.
7. Refer to the work of specific individuals (including yourself) in the past tense; generally accepted facts and principles should be written in the present tense.
8. Decide whether the experimental design adequately addresses the hypothesis and whether it is controlled.
9. Many studies lead to some new questions and open new avenues of research. Suggesting a new hypothesis and the possibility of new experiments is essential to address the central question further. There must be a desire to critically evaluate the decisions made in designing the study and recommend options to others interested in the same problem.
10. Present the reasoning and arguments clearly and validly. No matter how important the research is, the full results will be strengthened if carefully considered and discussed within the article.
11. Analyze and draw a conclusion based on the results obtained.
12. Conclude the discussion with a summary of the conclusions on the contribution of the work.

Considering the complexity of this section and that the author has total freedom to present, confront, highlight, or minimize the impact of his results, it is a section in which it is possible that the author, consciously or unconsciously, influences the facts with his affections and deviates his results by making a discussion that is not entirely neutral (Francis Bacon). This freedom is one of the worst biases that can occur in scientific research, and this section lends itself to it if the researcher does not consider it.[21]

About frequent errors found in medical writings and their correction.[22-29]

Errors in the wording

Many linguistic errors in medical publications in Spanish is a current problem that deserves attention. Despite numerous scientific writing manuals, finding a scientific article with less than two errors of this type is complicated, which can turn a methodologically impeccable article into a confusing, unintelligible, and unpublishable piece of writing.

A punctuation mark **(;)** that indicates a pause longer than that marked by a comma and shorter than that marked by a period. It is written attached to the word or sign that precedes it and separated by a space from the word or sign that follows it.

A punctuation mark **(:),** no space should be left between the colon and the adjacent digits, e.g., 15:30 hours (for this, the period is also used, e.g., 4.1, 2.2). They also indicate a division in mathematical expressions; in this case, they are written with a space separating them from the neighboring digits: 8: 2 = 4. This type of enumeration is characterized by the fact that it always contains an enunciative element, which can be either a word or a syntactic group comprising the content of the enumeration members. For example:

1. I made you dinner: soup and an omelet. 2. The president will discuss essential things for the country: the minimum wage increase and national security. 3. Fresh, clean, and pure: that is what spring water is.

Abbreviations

Whenever abbreviations are essential, they should be written with a period and generally with initial capital letters 10, for example, acetylsalicylic acid (ASA). The standards agree that when mentioning for the first time, the full name should be written and in parentheses its abbreviations, which can then appear indistinctly in the paper.[26] Regarding punctuation, it is recommended that it should not be used so as not to overload the text (ASA).

For a list of standard abbreviations, it is suggested to consult the *Council of Biology Editors Style Guide* or other standard sources.

The period or comma in numbers

The period is used in countries located in the north of the American continent (such as the United States, Mexico, and Canada), in the Caribbean islands, and some countries located in Central America (such as Guatemala and Honduras). However, in French-speaking Canada and Costa Rica, the comma is used. Similarly, the comma is used in countries in the south (such as Venezuela, Chile, Argentina, Colombia, and Uruguay, among others). So, we align ourselves with our geographical location, although the Real Academia Española indicates that in Spanish, the comma should be used, and in English, the period.

The script

When can a hyphen be used between compound words?

1. Surname:
   Some surnames are formed with two names simultaneously: Silva-Santisteban, Sánchez-Madariaga, Cerrón-Palomino, Sala-i-Martin, or Sánchez-Cano. Some journal rules recommend the hyphen between common surnames in contravention of current grammatical rules.
2. First names:
   The first name of some people is composed of two names. This practice avoids the first name's second lexeme being considered a surname: Luis-Jorge, José-Alberto, or Tomás-Eloy.
3. Relational adjectives:
   In these cases, a hyphen may be used or for a modification of the ending of the first term with "-o." Examples of hyphenated compound words in adjectives: sadistic-masochistic, oral-dental, or infantile-juvenile.
4. Nouns:
   This orthographic sign (-) should be distinct from the dash (—). A horizontal stroke represents both, but the hyphen is significantly shorter than the dash. The hyphen is used in the following cases:

   a. **Join proper names or surnames, common names, and adjectives:** *Antonio-Marcos, Sánchez-Cano, Agassi-Sampras confrontation, sofa-bed*, city-bedroom*, man-frog*, kilometers-hour, quality-price, cost-benefit, director-presenter, Hispanic-Roman*, French-Canadian*, German-Soviet*, linguistic-literary, theoretical-practical, technical-administrative*.
      * They can be written without the hyphen.
   b. **The hyphen in other graphic combinations:** *pages 23-45, academic year 71-72*. Dashes can be used to separate pairs or trios of digits that make up telephone numbers: *593-12-83,* but in these cases, it is preferable to separate them with blank spaces: *593 12 83* so as not to overload the text.

Examples of hyphenated compound words are airplane-hospital, doctor-surgical, and José-Andrés. Between the years 2014 and 2018, or between the years 2014-2018. Both forms are correct. The conjunction "and" can coordinate two or more members of a period

or interval: "I studied for the master's degree between 2014 and 2018". Likewise, the hyphen can be "the connecting nexus of any type of numerical interval" *(Ortografía de la lengua española*, 2010, ch. III, 4.1.1.1.3.1c): "I studied the master's degree between the years 2014-2018".

In what situation can two names separated by a hyphen be written?

To join first names to avoid the middle name being interpreted as a surname, for example, *Luis-Jorge Camino*, where *Jorge* is the middle name, as opposed to *Luis Jorge Camino*, where *Jorge* is the first surname.

To join compound surnames formed from two simple ones, for example, *María Garrido-Lecca Castro*, where *Garrido-Lecca* is the first surname, versus *María Garrido Lecca*, where *Lecca* is the second surname.

Time period, time/time-lapse? Both expressions are redundant, but they can be written. Time lapse is even collected by the Academy, although only lapso is recommended.

Terms formed with the element sero-, which alludes to sera, such as seroprevalence or serotype, are written with that initial and without space or hyphen.

The noun triage, used in medicine to refer to the classification of patients according to a system of priorities so they can be provided with the necessary medical care, is spelled with a J, not Triage.

The compositional element neuro-, which comes from Greek and means 'nerve' or 'nervous system', is often used to form terms such as neurodegenerative, neuroscience, etcetera, preferably written without a hyphen with an initial lowercase letter.

The correct spelling of the name of the bacteria that has affected a thousand people in Germany is *Escherichia coli* or *E. coli,* in italics.

It is correct to write all cardinal numbers less than one hundred in one word, such as forty-eight, thirty-one, or seventy-seven.

The form pos- is recommended, both before the vowel (*posoperatorio*) and before the consonant (*posguerra*), as indicated in the new *Ortografía de la lengua española*.

The word ratio, meaning 'ratio or quotient between two numbers', is originally feminine *(la ratio*), although it is accepted as masculine (*el ratio*).

The expressions *dar de alta* and *dar el alta* share the same meaning in the medical context but are constructed with different pronouns: *lo(s)* and *la(s)* in the first case (*lo/la/los/las dieron de alta*) and *le(s)* in the second (*le/les dieron el alta*).

The term thyroid can be used in both masculine and feminine (*el/la tiroides*) and always ends in ese, so it is advisable not to write tiroide.

The acronym COPD, which stands for chronic obstructive pulmonary disease, can also be written entirely in lower case, EPOC, as a common noun, and not EPOC, as a proper noun.

When a figure is followed by a symbol, such as a percentage (%), it is advisable to leave a space between them.

According to Roberto Zavala Ruiz (2005, p. 49) in his book *Sugerencias de redacción*, the articles *el* and *un* should not be placed before expressions of percentage amounts "because they add nothing, are incorrect and blur the typography".

Then it would be incorrect to say, a "**A** *20% of respondents are sick, and* ***the*** *80% remaining are not sick"*, recommending instead, "*20% of respondents are sick, and the remaining 80% are not sick"*.

Insulin resistance (correct); insulinresistance (incorrect).

Tele radiography (correct); teleradiography or tele-radiography (incorrect).

Manuscript submission

Before sending the manuscript to the editor, it is recommended that at least two people read it. A first review should be carried out by another expert in the topic covered by the article but who is not a co-author of the article.

A general recommendation is to let the article "cool" for several days, or even weeks, before rereading it for the last time. Many

publications include a checklist of key points that must be included for approval.

To get an idea, we can consider the "usual" 8,000 words, especially in review papers, and includes only the IMRyD (not including the first page, abstracts, tables, figures, or references). In a "normal" letter of work, depending on the number of tables, graphs, and figures, these can be between 23 and 25 pages. We will use this last number to make an approximation in the length analysis.[27,28]

References should be numbered consecutively in the order they were first mentioned in the text. References should be identified in the text, tables, charts, figures, and legends in Arabic numerals in parentheses.

Correct example:

> "The possession of concepts and hypotheses matters perhaps less than theoretical availability, the regular exercise of conceptualization, and the habit of constantly formulating varied hypotheses, accompanied by professional circumspection concerning the validity and mode of demonstration".[2] The Vancouver standards also accept in-text references in parentheses (1), but I find that they overload the text and prefer the superscript in square brackets.

Another error observed is that multiple references within the text need to be revised. Example: (1, 2, 4, 5, 6, 7, 8, 9) is incorrect; in these cases, it should be written as follows: (1, 2, 4-9).

Journal titles in references should be abbreviated according to the style used by MEDLINE (www.ncbi.nlm.nih.gov/nlmcatalog/journals).

Lack of articles: widespread in American literature but inelegant in our language. *"Gestational diabetes is an entity…",* it would read much better "Gestational diabetes is…", *"Menopause is a syndrome that groups…",* it would read better "Menopause is a syndrome that…".

1. The scar zone covered the entire inferior aspect, from the apex to the base and from the inferior septum to the posterior LV.
2. The scar area covered the entire inferior aspect, from the apex to the base and from the inferior septum to the posterior LV.

Fillers: repeating a term over and over again. For example, count 14 *"However"* in seven pages. The same with *"nevertheless", "certainly", "i.e.", "in the same way", and "that is"*. There is also room for the abuse of commonplaces or unnecessary wildcards. It is essential to avoid the often-redundant use of catchwords, such as the adjective *"important"*, for example: *"It is important to begin by saying", "I reiterate", "to foresee beforehand", "to reaffirm emphatically", "main protagonist"*, etcetera.

Plagiarism: voluntary or involuntary. Many problems would be avoided if when "borrowing" a text is put in quotation marks or italics, and immediately at the end, its exact reference is cited, or at the beginning of the paragraph, it is acknowledged that they are the words of the author so-and-so.

Inappropriate and abusive use of capital letters: capital letters should be avoided for several reasons: they are challenging to read, slow down reading, and a message full of unnecessary or unjustified capital letters can become tedious for the reader.

1. The initials of the first name or surname must be accented, even if they are written with capital letters (Ángel, Álvaro).
2. Quali-quantitative, not qualiquantitative.
3. Intraarticular, or intrarticular, not intra-articular. The prefixes are permanently attached to the lexical base *(*intrauterine*)*; therefore, like intramuscular, the word intraarticular is written without a hyphen. It should be noted that the use of the simplified variant intrarticular is admissible (*Nueva gramática de la lengua española*, 2009: 10.3a).
4. Preexperiment, not pre-experiment. When the prefix *pre* is joined to a common and simple noun, it merges into a single spelling with this noun: *preexperimento*, *precrisis*, and *preelectoral*.

5. The correct abbreviation for **versus** is **vs**, not **vs** or **Vs**.

CONCLUSIONS

It is vital to comply with the Vancouver norms, the norms for authors of the journal to which the work is sent, and a good dictionary in Spanish and English so that no grammatical, spelling, or writing errors are made in medical writing. Some authors do not recommend this section since, in science, there are never conclusions since science is constantly evolving and everything is still being concluded.

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Correspondence:
Guillermo Padrón-Arredondo
E-mail: gpadronarredondo@hotmail.com