

How to write a laboratory-based case study for the Journal

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Abstract

Case studies are educational for the reader. They bring together laboratory results with the patient's clinical diagnosis. Case studies include description of an unusual disorder or aetiology, support for or disconfirmation of a clinical hypothesis, new insight into disease pathogenesis, unusual case presentation, and description of adverse drug or food-induced reactions. Case studies show what medical laboratory science is all about - as a diagnostic aid for the clinician. In this article I will briefly describe the characteristics of a case study for submission to the Journal.

Key words: case study, clinical diagnosis, laboratory results

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Introduction

Case studies published in the Journal brings together laboratory results with the patient's medical conditions and clinical diagnosis. They are educational for the reader and shows what medical laboratory science is all about - as a diagnostic aid for the clinician. Reasons for submitting case studies include: presentation of an unusual disorder or unusual aetiology; to support or disconfirm a clinical hypothesis; offer new insight into disease pathogenesis; to describe an unusual case presentation; or to describe adverse drug or food-induced reactions.

For the last two years there has been an annual prize awarded by the NZIMLS for the best case study published in the Journal during the calendar year (1,2). In this educational article I will briefly describe how to write up a case study and hope this will spur some from our profession to submit case studies to the Journal. Over the years many good case studies have been presented at SIG or other scientific meetings yet only a very few have been published in the Journal, where a larger and an increasing international readership awaits. Case studies are important contributions to the medical laboratory science literature and evidence base, are educational for readers, and are often a way for authors to start their publication record.

Case studies typically are divided under the following headings: Title, Abstract, Introduction, Case Report, Results, Discussion, Conclusions, Acknowledgements, References.

Title

The title should be accurate description of the case study followed by the words - "a case study", or case studies if more than one patient is presented as in a retrospective analysis. Do not use a funny title, except maybe as a subtitle. The title should alert the reader to the main focus of the case study.

Abstract

Unlike a scientific article, the abstract for a case study is unstructured, i.e. no subheadings of background, methods, results and conclusions. The abstract should start with a very brief background generally outlining the clinical condition of the case study to be presented. This is followed by a paragraph briefly

outlining the case study with only the relevant clinical details and the main laboratory results. In the final paragraph state the overall conclusion arising from the case study. At the end include up to five key words, preferably medical subheading terms from Index Medicus. An excellent example is the case study published in the August 2008 issue of the Journal (1).

Introduction

Describe clearly the purpose of the case study and provide a brief review of the published literature pertaining to the topic. Do not write an in-depth review of the topic. The best type of articles to reference here are previously published review articles and, if relevant, the first described case in the literature. Do not discuss your case study in relation to the published literature here. This is for the Discussion section later.

Case report

This is the part where you describe the patient's medical presentation, outcomes, treatments if applicable, and laboratory results. The case study has to be presented in a chronological order with enough but succinct details. For the laboratory results include your laboratory's reference ranges and units of measurement. Often, if there is a lot of laboratory data, especially if the patient is followed over many days, it is better to present the data in tables and/or figures. Do not repeat data in text that is presented in the tables or figures. Only present data that is pertinent to the case study, do not add other laboratory data from tests ordered that do not add value to the case study.

An important consideration is patient privacy. Nowhere in the case study must the patient be able to be identified. If a photo of the patient is critical for the case study report, written informed consent is essential. Contact your local institution's ethical authority for guidance and approval. Another consideration is the clinician or medical team caring for the patient. They may have plans to write up the case study for possible publication in a medical journal. If published elsewhere, duplicate publication of the case in the Journal is not allowed. Contact the primary care physician in the first instance and explain that you wish to publish the case, focussing primarily on the laboratory data. Offering the clinician co-authorship, often leads to agreement in allowing you to write up the case study.

Discussion

This is the part of the paper where the author discusses the case and the laboratory findings. Relate the case to what is already known from the published literature and if the results are different to what has been published, discuss possible reasons for this and what your opinion is. State any limitations to your case study. For instance, it may have been useful to have additional laboratory results for other tests, but these were not ordered at the time. You should also state, if so, what was unique about your case study.

Conclusion

The conclusion should briefly and succinctly be what was learned from the presented case study, it should not be a repeat of the case

history. Do not make any unsupported statements, conclusions or suggestions here.

Acknowledgements

Acknowledge anyone who has assisted you but does not justify authorship (3). For instance, you may have asked a colleague to read a draft of the article and asked for critical advice. Or one of your colleagues may have gathered the data or performed some of the laboratory analyses. Do ask their permission to acknowledge them.

References

Use only references from peer-reviewed articles that preferably are indexed in the major databases such as PubMed, EMBASE or CINAHL. Do not reference abstracts or personal observations. Reference only articles that are pertinent to the case study. In many cases only one authoritative reference per point made is necessary. Make sure that you have read in full the referenced article and make sure that the whole reference (authors names, article title, journal abbreviation, volume number and page numbers) is accurate (4). Do not reference data from abstracts as research has shown that up to 40% of published abstracts may have data in them that is not consistent with what is reported in the full text of the article (5).

Tables and figures

Only put relevant data in tables. If there are just a few data points do not put them in a table. Rather, these should be clearly conveyed in a sentence or two. Make sure you have a short and succinct title for tables (or figures) and put in any footnotes for clarification. Figures or photographs are a way to make the case study visually interesting and self explanatory. Again, do not put data that is in the tables or figures in the text and only include data that is necessary for the case study. Colour photos, although expensive to print, will be allowed providing that they are necessary to make a point and that no superfluous colour figures are included, Colour photos are essential in cases where haematology or histology findings are necessary for the case study.

In conclusion, it is hoped that the above brief guidelines on writing case studies will encourage members of our profession to submit to the Journal. Next time you are about to present a case study at a SIG or other scientific meeting, think simultaneously about writing it up for the Journal. If published, your interesting case study will reach a much wider audience (readership ± 2,000) that at a scientific meeting. Additionally, you can earn valuable CPD points and, if a financial member of the Institute, be eligible for the best case study prize (\$300). You will also be contributing to the world wide literature. Finally, READ THE INSTRUCTIONS FOR AUTHORS before submitting (www.nzimls.org.nz).

References

1. Naran S, Lallu S, Kenwright D. Pulmonary mucormycosis diagnosed by brushing cytology. A case report. *N Z J Med Lab Sci* 2008; 62: 32-4.
2. Hemmady S. Adrenal carcinoma: a case study. *N Z J Med Lab Sci* 2009; 63: 48-50.
3. Siebers R. Authorship (and non-authorship) criteria and new author requirements. *N Z J Med Lab Sci* 2008; 62: 3.
4. Siebers R, Holt S. Accuracy of references in five leading medical journals. *Lancet* 2000; 356: 1445.
5. Siebers R. Data inconsistencies in abstracts of articles in Clinical Chemistry. *Clin Chem* 2001; 47: 149.

Letters to the Editor

Malaria and HIV

It is always a pleasure to read the Journal but in the November 2009 issue the article on the prevalence of malaria and anaemia among HIV-infected patients is misleading and misinforming (1). The opening statement of the discussion section "Malaria may be helping to spread the HIV virus that causes AIDS..." is wrong and misinforming readers of the Journal.

It is possible that AIDS in HIV-positive persons can be exacerbated by a malaria infection but malaria itself has nothing to do with HIV. If the authors are sure that malaria carries the HIV virus and spreads as in their statements, then they need to state the species of *Plasmodium spp* and the vector mechanics that lead to the transmission.

Reference

1. Akinbo FO, Okaka CE, Omoregie R, Mordi R, Igbinuwen O. Prevalence of malaria and anaemia among HIV-infected patients in Benin City, Nigeria. *N Z J Med Lab Sci* 2009; 63: 78-80.

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The corresponding author replies

I feel Mandisodza has misinterpreted the statement in question. The statement was referenced from a WHO technical report (1). The report states that malaria increases the risk of HIV transmission. The explanation given was that malaria results in anaemia which may lead to frequent blood transfusions, which is a potential risk for HIV infection.

The statement is not a consequence of our research, but a WHO technical report. I hope this explanation satisfies Mandisodza's queries.

Reference

1. WHO. Malaria and HIV/AIDS. Interactions and complications. Conclusions of a technical consultation convened by WHO, 23-25 June 2004; World Health Organisation. WHO/HIV/2004.08.

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