

Case Reports: The core of practice-based evidence

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A case report is a type of scientific paper that describes a patient-centred clinical pathway, which depends on medical doctor's viewpoint, clinical insights and professional skills [1]. Case reports are particularly useful to: 1) recognize rare or uncommon clinical presentation of common diseases or clinical features of rare illnesses; 2) identify new diseases; and 3) establish the cost-effectiveness of medical treatments [2]. Furthermore, a case report is often the most important source of information on adverse effects following therapies. According to Greenwalt, case reports can explain a complex reality, because "a carefully documented study of an unusual patient represents an experiment of nature that may be the opportunity to explain a long-recorded but unexplained clinical mystery" [3].

It is well-recognized that scientific progress is based on upon observation, and it is supplemented by many experimentations. Ne-

vertheless, medicine must often satisfy the patient that could be affected by a condition for which no study or guidelines can support the clinical decision more than the practical experience of the same medical doctor and/or the preferences given by the patient.

Case reports may be useful, because they generate insight and hypotheses for further research (e.g., incidence studies) [1]; moreover, they can support individual treatment needs [1, 4] and promote problem-based learning among health professionals [2]. Ultimately, a case report can increase the medical knowledge of readers that can re-use it in their own medical practice.

The case report is the weakest link in the evidence-based medical chain. However, the clinical case as the bottom of scientific pyramid is the starting point for carrying out most evidence-based scientific contributions like meta-analysis and clinical trials [1].

KEY WORDS: Academic publishing; case reports; case histories; evidence-based medicine; practice-based medicine.

Unfortunately, case reports are seen as incidental anecdotes rather than effective contributions for building scientific evidence [4].

Jenicek (2001) stated 19 reasons to publish case reports [1] (see Table 1). Therefore, case reports can be considered as a source of inspiration that may give support to health professionals in handling difficult cases [5].

In literature, despite the fact that some journals do not publish case reports, there are a few of journals dedicated to publication of only case reports, such as the *Journal of Medical Case Reports*, which was launched by BioMed Central in 2007. In 2012, the same publisher established the 'BioMed Central Case Report Database', in which 30,000 case reports published by more than 250 journal have been indexed in the course of a single year (2012) [6].

Some of the most prestigious scholar journals such as *The New England Journal of Medicine* (NEJM) and *The Lancet* have created special sections for reporting clinical case reports. In the NEJM, there is a section called 'Clinical Problem Solving' in which the case is presented by an experienced clinician, whereas in the section 'Case Records of the Massachusetts General Hospital' the case is shown

and discussed with a pathologist. *The Lancet*, publishes case reports in the section 'Clinical Picture', in which case reports are described with a simple presentation.

The great value of case reports is shown by the fact that they are being increasingly published by scholar journals, in a time where researchers need to publish clinical trials and systematic reviews to get adequate visibility and more impact factor [2].

Nevertheless, case reports could be gathered and analyzed systematically to increase the scientific knowledge. Most of the referenced journal encourage authors to follow relevant standards for guaranteeing quality in the preparation of their manuscripts. These standards are the CONSORT Statement [7] for reporting randomized trials, the STROBE guidelines for strengthening the reporting of observational studies in epidemiology [8], PRISMA for reporting items for systematic reviews and meta-analyses [9], the guidelines for reporting adverse events [10] and the 'CARE Guidelines' for the Consensus-based Clinical Case Reporting Guideline Development [2]. The CARE guidelines checklist has been developed for improving the reporting of case reports. It provides a 13-item checklist

Table 1. Nineteen reasons to publish a case report (modified by Jenicek [1]).

1	Unusual presentation of an unknown etiology
2	Unusual natural history
3	Unusual clinical course
4	Difficult differential diagnosis
5	Erroneous diagnosis, causes and consequences
6	Unusual and/or unexpected effect of the treatment
7	Diagnostic and therapeutic 'incidents'
8	Unusual comorbidities
9	Transfer of medical technology
10	Unusual setting of a medical treatment
11	Management of an emergency case
12	Patient compliance
13	Doctor-patient relationship
14	Clinical trial of individual patients
15	Clinical situation not reproducible for ethical reasons
16	Limited access to cases
17	New medical technologies
18	Confirmation of what is already known (useful for a 'review and a systematic summary of case reports')
19	Solution of a difficult problem in the field of medical ethics

as a framework to publish case reports, by balancing adequate detail and concise writing that is one of the major characteristics of a case report (see more at: <http://www.equator-network.org/reporting-guidelines/care/>). According to the CARE guidelines checklist, a case report tells a story in a narrative format that includes the presenting concerns, clinical findings, diagnoses, interventions, outcomes (including adverse events), and follow-up. The narrative should also include a discussion of the rationale for any conclusions and any take-away messages. By following these guidelines authors could give robustness to their case reports increasing odds of getting

published in prestigious and well-established impacted journals that accept to publish only the most interesting case reports [2, 11].

In the era of evidence-based medicine, where meta-analysis of several randomized controlled research, is considered prominent with respect of evidence gathered from experts and clinical practice, we should not forget the essential role of practice-based evidence.

The basis of this evidence could be drawn by case reports and case series [12].

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