

Case Reports in Thoracic Oncology: Enhancing Patient-Centered Care

Relatos de Casos em Oncologia Torácica: Melhorar os Cuidados Centrados no Doente

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A case report has been defined as “A formal summary of a unique patient and their illness, including the presenting signs and symptoms, diagnostic studies, treatment course and outcome”.¹

Case reports date back to the *Edwin Smith Papyrus* (1600 BCE) and Hippocrates’ writings (5th century BCE), and Galen in second-century Rome. In the 19th Century and early 20th Century, specialized journals began publishing case studies systematically, on broader disease mechanisms, exemplified by work from Rudolf Virchow, Robert Koch and William Osler. In the second half of the 20th Century, early prominence of case reports shifted with the rise of evidence-based medicine. Yet, despite being seen as “low-level evidence,” they were critical for identifying rare diseases, treatment outcomes, and adverse drug effects (e.g., thalidomide defects). In the 21st Century a revival of interest has occurred, driven by precision medicine, structured reporting (e.g., CARE guidelines), and open-access journals.¹⁻⁴

Nowadays case reports play a vital role in medical literature by offering valuable insights into rare conditions, unusual presentations, novel treatment approaches, and unexpected

outcomes. In oncology, the role of case reports is particularly critical due to cancer’s complex and heterogeneous nature. Publications on rare malignancies, atypical presentations, or unexpected treatment outcomes can offer valuable information.^{2,3,5}

Case reports provide insights into these uncommon scenarios, helping oncologists manage similar cases by learning from others’ experiences. This is particularly valuable in thoracic oncology, where rare or complex cases often lack large-scale data, leaving a gap in established treatment protocols.

Clinical trials have strict eligibility criteria, which can exclude patients with comorbidities or atypical presentations. Series of cases or case reports offer real-world evidence by documenting how these patients fare with various treatments. This can help clinicians understand how treatments perform outside the controlled environment of clinical trials, leading to more informed decision-making.²

Lung cancer treatment is a rapidly evolving field, with new therapies emerging frequently. Adverse event case reports can reveal unexpected side effects of cancer therapies, particularly for

newer treatments like immunotherapies or targeted therapies. Such reports are critical in recognizing risks early, especially for patients with unique genetic profiles or comorbidities that may make them more susceptible to adverse effects. Documenting adverse reactions in individual patients helps clinicians weigh treatment benefits against potential risks in similar cases. In post-market surveillance highlighting adverse events that might not emerge in controlled trial settings. These “real-world” observations are essential for regulatory bodies, pharmaceutical companies, and healthcare providers to update guidelines or issue warnings about specific treatments. They allow clinicians to more effectively counsel patients about potential side effects, improving the transparency and shared decision-making process.² Such is the case of reports detailing toxicity to immunotherapy in metastatic lung cancer.⁶

In oncology, they often serve as a foundation for generating hypotheses trigger further investigation, leading to formal studies or clinical trials focused on understanding and mitigating adverse reactions. This iterative learning is essential in oncology, where therapies evolve rapidly, and patient responses can vary widely. This was the case with imatinib for chronic myeloid leukemia, where the investigation was rooted in early case observations and subsequent molecular studies.²

For healthcare professionals and trainees, oncology case reports can be educational tools. They bridge the gap between theoretical knowledge and clinical application by providing real-world examples of patient management. Through detailed narratives, case reports teach diagnostic reasoning, decision-making processes, and patient-centered care, fostering critical thinking.²

Oncology is at the forefront of personalized medicine, where treatments are tailored based on genetic, molecular, and clinical profiles. Case reports play a crucial role in this paradigm by documenting individualized treatment approaches and outcomes. For example, reports of patients with rare genetic mutations responding to specific targeted therapies provide evidence for expanding treatment indications and refining precision oncology guidelines.²

In addition to clinical and scientific contributions, case reports emphasize the humanistic aspects of oncology. By presenting individual patient stories, they advocate for patient-centered care and highlight ethical considerations in cancer management. These narratives remind the medical community of the importance of compassion and shared decision-making in oncology practice.²

While clinical case reports provide numerous benefits to medical literature and practice, they also have certain limitations and drawbacks that merit reflection. These include concerns related to evidence strength, generalizability, ethical issues, and potential for publication bias.⁷

Findings from a single case report may lead to overgeneralizations or unwarranted clinical applications without further validation. They may inadvertently contribute to the proliferation of unproven hypotheses if misinterpreted as broadly applicable evidence.⁷

Case reports often document rare or unusual scenarios. This specificity limits their applicability to larger populations, especially when dealing with diverse genetic, environmental, or demographic factors. They risk overemphasis and misinterpretation potentially leading to inappropriate treatments or expectations.

There is often a preference for publishing rare or “sensational” cases, which creates a form of publication bias. Confounding factors or coincidental findings might be mistaken for causation, leading to speculative or incorrect assumptions.^{7,8}

Publishing clinical case reports in compliance with established guidelines, such as the CARE (Case Report) guidelines.⁸ Following established guidelines for publishing clinical case reports is not merely a procedural necessity but a critical step in ensuring ethical, educational, and scientific value. Adherence to these guidelines enhances the reliability, relevance, and impact of case reports, solidifying their role as an indispensable tool in advancing medical knowledge and improving patient care.⁸⁻¹⁰

Clinical case reports in oncology are a cornerstone of medical knowledge, offering a window into the complexities and nuances of cancer care. They document rare cases, generate hypotheses, support personalized medicine, and serve as vital educational tools. While often undervalued in the hierarchy of medical evidence, their role in advancing oncology research and improving patient outcomes is undeniable. The continued publication and dissemination of high-quality oncology case reports will remain essential in the era of precision medicine and global cancer control.

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REFERENCES

1. Nissen T, Wynn R. The clinical case report: a review of its merits and limitations. *BMC Res Notes*. 2014;7: 264. doi: 10.1186/1756-0500-7-264.
2. Gilbar PJ, Goldspiel BR. The continuing importance of oncology case reports. *J Oncol Pharm Pract*. 2021;27:263-5. doi: 10.1177/1078155220988577.
3. Kellett JG. Case Reports in the Past, Present and Future. *Eur J Case Rep Intern Med*. 2024;11:004965. doi: 10.12890/2024_004965.
4. Sampayo-Cordero M, Miguel-Huguet B, Malfettone A, Pérez-García JM, Llombart-Cussac A, Cortés J, et al. The Value of Case Reports in Systematic Reviews from Rare Diseases. The Example of Enzyme Replacement Therapy (ERT) in Patients with Mucopolysaccharidosis Type II (MPS-II). *Int J Environ Res Public Health*. 2020;17:6590. doi: 10.3390/ijerph17186590.
5. Caban-Martinez, Alberto & Beltrán, Wilfredo. Advancing medicine one research note at a time: the educational value in clinical case reports. *BMC Res Notes*. 2012;5:293. doi: 10.1186/1756-0500-5-293.
6. Lee E, Jang JY, Yang J. Uncommon Adverse Events of Immune Checkpoint Inhibitors in Small Cell Lung Cancer: A Systematic Review of Case Reports. *Cancers*. 2024;16:1896. doi: 10.3390/cancers16101896.
7. Calvache JA, Vera-Montoya M, Ordoñez D, Hernandez AV, Altman D, Moher D. Completeness of reporting of case reports in high-impact medical journals. *Eur J Clin Invest*. 2020;50:e13215. doi: 10.1111/eci.13215.
8. Moradi A, Moghimian M, Ghoreifi A, Shakiba B. Quality assessment of case reports in high-impact urology journals using SCARE guideline. *Health Sci Rep*. 2021;4:e353. doi: 10.1002/hsr2.353.
9. Rison RA. A guide to writing case reports for the Journal of Medical Case Reports and BioMed Central Research Notes. *J Med Case Rep*. 2013;7: 239. doi:10.1186/1752-1947-7-239
10. Kempen JH. Appropriate use and reporting of uncontrolled case series in the medical literature. *Am J Ophthalmol*. 2011;15:7-10.e1. doi: 10.1016/j.ajo.2010.08.047.