

Putting Statistics into Play

by PAMELA HALLQUIST VIALE, RN, MS, CS, ANP, AOCNP®



Statistical analysis can be intimidating to clinicians who work with patients with cancer. My initial introduction to statistics as an undergraduate was not particularly helpful for the evaluation of clinical research as a nurse. Like many professors, my statistics instructor based the curriculum on games of chance, and the course mostly left me with an impression that my chances at winning in Las

Vegas were not very favorable. My graduate-level statistics course, with information on experimental research design and two-tailed tests, was more enlightening. However, I had little understanding of how to critically apply those research principles to my clinical work.

Yet the critical appraisal of clinical research is an integral part of the advanced practitioner's day-to-day activities when caring for patients with cancer. We must be able to read clinical research and evaluate the results of research studies. In addition, we need to understand the types of clinical trials conducted in patients with cancer as well as the study endpoints.

Confidence intervals (CIs) and hazard ratios (HRs) are essential parts of the statistical analysis used in determining the strength of research results. The CI can refer to the best guess at a treatment effect in a study, and the HR is often used to describe the outcome of a clinical trial questioning the extent of a new treatment effect on shortening the duration of illness (Norman & Streiner, 2009; Spruance, 2004). The all-important *p*-value is crucial to the evaluation of the probability that the difference seen in a clinical trial could be due to chance versus a study intervention (Norman & Streiner, 2009).

Although most advanced practitioners have been exposed to statistical analysis in the classroom setting, learning how to apply that knowledge to our clinical practice is vital. When a patient with metastatic colorectal cancer inquires about the statistical chances of a new treatment working, the advanced practitioner must be able to discuss the current research regarding the new therapy and what improvement it offers over standard therapy. We need to be able to explain the CI and

HR to the patient and discuss the p -value for the study results. If the p -value for the study reached .05, we should be able to communicate to our patient that the results show a 5% probability that they could have been due to chance. It is important to educate patients regarding overall survival, progression-free survival, and other endpoints to help them understand their statistical chances of responding to the new therapy. And many of us do this every day.

However, many advanced practitioners are not yet comfortable with statistical analysis or explaining statistical terms to patients. Authors Jeanine Brant, Terri Armstrong, and Peg Esper aim to increase your comfort level with statistics in our new feature, *Translating Research into Practice*, or TRIP. In this issue, TRIP will introduce basic concepts in statistical analysis. Future issues will discuss the critical analysis of selected research studies. Let us know if you like this new feature and if you find it helpful in your advanced practice.

We are starting a new series of articles based on the current status of biomarkers associated with common tumors, beginning with Paula Anastasia's paper on markers in ovarian cancer. Additional offerings in this issue include a review of current rash management practices in patients undergoing radiation therapy for head and neck cancer when receiving an epidermal growth fac-

tor inhibitor agent. Author Deanna Yamamoto discusses the struggles to manage insomnia in the patient with cancer, and authors Denice Economou, Amy Deutsch, and Amy Edgington define the role of the clinical nurse specialist and nurse practitioner in survivorship care. Chris Campen discusses the use of ofatumumab, a monoclonal antibody agent, in this issue's *Prescriber's Corner*. Susan Moore reviews the changes associated with the updated APA 6th edition, and our *Practice Matters* feature discusses one hospital's development of a Rapid Response Team. Finally, this issue's *Clinical Snapshot* features a discussion of mucositis by Pamela Gebhardt.

As a new journal, we want to meet your needs. To do this, we need feedback from readers regarding the problems or challenges you face in your day to day practices. Please write to us and let us know what issues you'd like to see covered in *JAdPrO*. We would love to hear from you!

References

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