Commentary: Troublesome Words, Linguistic Precision, and Medical Oncology

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Linguistic precision is not something we as oncologists spend a lot of time thinking about. Precision in diagnosis and drug dosage occupies this zone. But on occasion our attention is caught by an utterance from ourselves or a colleague, or a phrase in a manuscript that prompts a second look. One such phrase, or a variation, is routinely heard on ward rounds and in conferences, and is often found in the medical literature. One hears, “Mrs. Jones failed standard therapy before enrolling on the research protocol” and “Fourteen patients failed therapy.” And that doesn’t include all of the related phrases: he failed, she failed, they failed. Sometimes the phrase reflects a correct meaning: the patient failed to show up at his doctor’s appointment. Often, though, the meaning is that “the patient failed chemotherapy.” The executive director of the Lung Cancer Online Foundation raised the issue after reading this comment in an editorial: “Until the test for mutations...is widely available, patients will continue to receive Iressa/H23041 when they fail chemotherapy” [1]. Ms. Parles expressed concern that the language implies guilt assigned to the patient for the lack of response to therapy. We know that the author meant no such thing, given that our drugs fail time and again to achieve sufficient clinical benefit to enter the anticancer armamentarium, but, in keeping with our linguistic habit of substituting brevity for precision, we imply that the patient failed rather than the drug.

Is the phrase a modern usage that has crept into the language of physicians as clinical trial complexity has increased? Perhaps. A casual review of early issues of the journal Cancer suggests that the phrase “patient failed therapy” was not in general use in the early days of experimental therapy. Rather, the papers note that patients responded favorably or poorly, or that the patient failed to respond [2–5]. There were papers that describe the patient as being drug resistant, a related misuse: “This patient eventually became refractory...” [2]; “Fourteen others, although responding at first, eventually became resistant to these drugs” [6]; “He had an adequate course of urethane and should be considered definitely a treatment failure;” and “this patient... responded first and then became resistant...” [5].

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to TEM” [3]. There is repeated use of the term “cases” to refer to patients. For example, “Case 65 . . . responded poorly to treatment” [2], “breast cases that failed to respond . . . ” [7], and “three cases received adequate doses . . . but failed to respond to the drug” [8]. Thus, it does not appear that older papers are linguistically better or are more considerate of patient sensibilities. Instead, a different set of catch phrases seems to have been in use. Do any of us intend to convey the idea that the patient is responsible for the outcome of therapy? Obviously not. Admittedly, the term is the most succinct way to state the fact that a given treatment proved to be of limited value to the patient. It can be argued that, in detailed clinical trial reports, it is simpler to state that 50 patients failed therapy than to state that treatment failure was noted in 50 patients or that progressive disease was observed in 50 patients. However, the shorthand simply isn’t correct. We can invoke the notion of a living language to support some new usages, but not this one. It’s the tumor, and not the patient, in which we are hoping to observe shrinkage. We would consider a statement noting that the car drove to the airport as an example of imprecise writing at best. The problem for oncologists is that imprecision also assigns responsibility for failure to the wrong party.

In The Cambridge Encyclopedia of the English Language, David Crystal concludes that there must be at least a million words in the English language [9]. An exact number cannot be determined because the calculation depends upon whether one includes words in current use, obsolete words, or technical words. The Second Edition of the Oxford English Dictionary includes full entries for 171,476 currently used words, and 47,156 words considered obsolete [10]. The answer also depends upon how you count variations on a word, such as long, longer, and longest. Medical words like hypesthesia, dysesthesia, and anesthesia add to this expandable list. New words are introduced into the vocabulary regularly—a noisier, for example, does not appear in PubMed before 1994. If new meanings and new words enter our living language, how do we know when the usage is right or wrong?

The word “data” provides a good example of this dilemma. Data is plural, and the singular, from Latin, is datum. The word “datum” is almost never used in medicine—PubMed records 2,261,526 citations for data, compared with 482 for datum. The data is correct. The data are correct. Microsoft Word, the arbiter of linguistic accuracy for the biomedical scientist, does not recognize “data is” as incorrect, and both sentences go unmarked. Soon, those of us who stop midsentence to correct our own misusage of the word will be replaced by a younger generation of scientists who consider the dual nature of the word—both singular and plural—as second nature as deer or series. In Bryson’s Dictionary of Troublesome Words, the author argues that we should preserve data as plural as a form of linguistic elegance and precision [11].

Among linguists it has been argued that, because English is a living language—constantly changing with the introduction of new words, phrases, and usages—there are few absolutes. In the past, usage writing set strict rules and limits. Modern linguists argue, as in Stanford Professor Geoffrey Nunberg’s essay “Usage in The American Heritage Dictionary,” that usage should be governed by fundamental linguistic virtues—simplicity, clarity, and intelligibility—rather than being dominated by rules [12]. Thus, it appears that linguists will allow biomedical scientists some leeway as we go about the business of communicating our work with other scientists and with the world. But, there should be limits. These limits may be intuitive, to quote the well-known phrase penned by Supreme Court Justice Potter Stewart, “But I know it when I see it” [13], but intuition may not suffice. Some boundaries must exist to save us from ourselves. As we strive for scientific precision we should not allow careless communication.

If we avoid the phrase patients fail therapy, do we do so because of its connotation of responsibility or because it is linguistically incorrect? The corollary to a patient failing therapy is a patient responding to therapy. While the responded phrasing lacks the connotation of fault, it still wrongly places the outcome. The tumor responded to therapy. To state that 50 patients experienced a complete remission, or that complete responses were noted in 50 patients, is awkward but also more correct than stating that 50 patients responded to treatment. To be precise, complete or partial responses were noted in tumors in 50 patients. Perhaps, for a vaccine or immunotherapy, the phrases could be considered apposite, wherein the patient’s immune response is being considered. Even that, however, might be written as “immune responses were noted in 50 patients.”

Although precision in language might not be considered the highest scientific priority, we hold fast to the notion that 28% and 32% reductions in tumor dimension when using the Response Evaluation Criteria in Solid Tumors (RECIST) to score tumor responses have biologically different meanings and must be reported as such. A neutrophil count of 1,010/mm$^3$ is a grade 2 toxicity, whereas a neutrophil count of 990/mm$^3$ is grade 3. Upon such differences, the doses of experimental therapies are modified in phase I trials. Likewise, a platelet count above or below 10,000/mm$^3$ has a very different meaning. So we cannot argue that precision is a trait that clinical investigators lack.

So, where does this leave us? How do we achieve accu-
racy, respect, and brevity? The answer must be that we scan our own words, as well as those of our colleagues, that we reread our manuscripts with diligence, that we correct our trainees midpresentation, and that we add this bit of literary criticism to our peer-review and editorial responsibilities. We must insist upon phrases such as “disease progression was observed” or “tumors in 14 patients met the criteria for disease progression . . .” With the launch of the new RECIST 1.1, we have affirmed our response definitions and we can likewise use this as a moment to change the way we write [14]. We must cease writing and using the term patient failed altogether, and we should reduce the use of patient responded to some linguistically acceptable minimum. What that acceptable minimum is, well, we will know it when we see it.

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REFERENCES