Letters to the Editor

Lookalike, Soundalike Tests: Preventing Serious Medical Errors

To the Editor.—With vast pharmaceutical therapies available, many medications have look-alike and sound-alike names, which can lead to a serious medical error, if a wrong test for therapeutic drug monitoring or a wrong medication is ordered. In a recent study, we reviewed the cycloSERINE test results ordered by a referring laboratory “unnamed A,” in 2010 and 2011, and investigated whether a wrong test for cycloSERINE, an antibiotic, was ordered through the laboratory A, despite physicians’ orders for cycloSPORINE, an immunosuppressant.

Of the 886 tests, 634 (72%) were ordered through the referring laboratory A. The review of cycloSERINE test results showed a statistically greater proportion of the tests ordered by laboratory A had lower values in comparison to the tests ordered by all other laboratories combined. Results of trace (<2 µg/mL) and low (2–5 µg/mL) occurrences were 97% and 99%, respectively, for laboratory A, in contrast to 3% and 1% for the cycloSERINE tests ordered by other laboratories combined. We suspect 24% to 46% of the tests by laboratory A were incorrect for cycloSERINE, instead of cycloSPORINE, because the results were below detectable limit, which is unlikely for patients who are on cycloSERINE therapy. The test result values for cycloSERINE were significantly lower for laboratory A than they were for the test result values from other laboratories combined. For instance, for result values near and within therapeutic range, 10 to 20 µg/mL and more than 20 µg/mL, the respective occurrences were 17% and 10% for laboratory A, in comparison to 83% and 90% for all other laboratories combined. We also investigated the possibility of analytic interference between the 2 tests and found that cycloSPORINE (1–10 µg/mL) did not show analytic interference with the cycloSERINE colorimetric assay.

Because several physicians directly contacted our laboratory to inquire about the reason behind the trace or low test results for cycloSPORINE, our conclusion was that referring laboratory A likely entered a wrong test request for cycloSERINE instead of cycloSPORINE. The ordering physicians were informed that we analyzed the specimens for cycloSERINE but not cycloSPORINE. These findings were also communicated to laboratory A. Most likely, the test entry errors were made by patient service centers at laboratory A that transferred physicians’ orders into a computer system. Alteration of physicians’ orders by nonphysicians is a well-described problem.1 The errors in laboratory A were not the result of a miscoded order entry screen with incorrect test mapping.

As part of the corrective actions, laboratory A implemented a change to the ordering system at its patient service centers first, and then is following up with its other locations. It moved the test code for cycloSERINE to a different location within its system. A pop-up notice is included for the person who is entering the test. By moving the test, it takes one extra step to locate the test in the laboratory system, which will catch the attention of the service center staff. An additional note will be included to indicate that they need to make certain they are drawing specimens for the correct test. A note was also sent to laboratory A shipping locations.

In brief, this letter addresses a topic that will interest readers concerned with medical errors and test utilization management. To minimize errors for look-alike, sound-alike drugs in therapeutic drug monitoring and toxicology testing, in consultation with the pharmacy, ordering physicians, and the laboratory medical director or pathologists, a list of pharmaceuticals with names that may easily be confused should be generated and posted in clinical laboratory and client service areas. The list should be communicated to potential customers. The use of “tall-man” lettering for a portion of the name is widely acceptable in pharmacy practice2–6 and may reduce confusion between medications with look-alike and sound-alike names, such as cycloSERINE and cycloSPORINE. In addition, to minimize the inaccuracy of test results, likely because of the highly unstable nature of cycloSERINE, the specimen collection, handling, storage, and transportation must be closely followed.

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References

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The Interventional Pathologist

To the Editor.—We really appreciated the paper “Next-Generation Pathology and Laboratory Medicine” by Dr David N. Louis and colleagues,1 and we would like to disclose what is happening in our pathology departments in Italy. We are observing a gradual and important change in the pathologist’s profession because a new character has appeared in our daily practice: we can define this character as the “interventional pathologist.”2 Every day, we now spend most of our time outside of the pathology department: we help non-pathologist physicians and radiologists to solve difficult clinical cases, we aid oncologists in selecting medical pro-

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cedures, and we verify the adequacy of gastrointestinal biopsies in the endoscopy room. We also discuss the best procedure for molecular characterization of neoplasms. Broadly speaking, we give an effective, direct, and crucial contribution to the patients’ diagnostic and therapeutic workup. Moreover, in our hospitals, pathologists personally perform cytologic biopsies, such as thyroid or lymph node fine-needle aspiration biopsy, and histologic sampling, such as breast core needle biopsy. Therefore, we have to interact with radiologists for correct localization of target lesions. This aspect of our job promotes a different cultural interpretation of our professional image. Our role is now multifaceted and multidisciplinary: we are considered clinicians more than laboratorians. As a result, the privileged point of view of the interventional pathologist helps reduce error rates intrinsic to the diagnostic process. Because the pathologists perform the diagnostic procedures themselves, they appreciate the challenges of obtaining adequate diagnostic specimens. This expanded approach to the practice of pathology requires a unique multidisciplinary knowledge. For example, we believe that the pathologist should have a basic knowledge of imaging, and be able to interpret radiography and ultrasound images. We also know that these subjects are not included in the conventional training of the pathologist. These developments have radically changed the traditional view of our profession. Dr. Rosai recently stated in a leading article that “if one looks carefully at the modus operandi and scientific production of the pre- eminent representatives of the specialty over the years, one begins to realize that they can be divided into 2 main models: the surgical pathologist-clinician (a primarily American phenomenon) and the surgical pathologist-morphologist-pathobiologist (a largely European species).” We think that the interventional pathologist could be a third model in our profession. The interventional pathologist becomes a modern and all-encompassing figure in the diagnostic process. Are we ready for this cultural revolution? We suggest that at least a part of the pathologists’ team should be committed to this new paradigm in pathology. Finally, we would like to underline that this new model for our profession helps in the recruitment of a new generation of young pathologists, who show great enthusiasm toward this rewarding new role.

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References
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