

Brain SPECT Imaging in Clinical Practice

TO THE EDITOR: I agree with the statement by Bryon Adinoff, M.D., and Michael Devous, Ph.D. (1), in their Letter to the Editor published in the May 2010 issue of the *Journal*, that “it is likely that, within the next decade, Dr. Amen’s claims [and fervent hope] will be realized in that psychiatrists will enjoy the ability to diagnose and prescribe treatments based, in part, upon neuroimaging findings” (1, p. 598). Imaging is now being used by psychiatrists here in the United States, in Canada, and abroad to aid patients. I cannot imagine anything more damaging to the imaging field, however, than encouraging medical board investigations for those who are early adopters. The California Medical Board investigated my use of single photon emission computed tomography (SPECT) 13 years ago, found no violation, and encouraged me to publish our findings, which I have done.

One would think that a more enlightened attitude toward a field, as plagued by uncertainties as psychiatry still is, would welcome the practical application of neuroimaging. In 2001, Camargo wrote “Brain SPECT is rapidly becoming a clinical tool in many places, particularly in dementias, head injury, [obsessive compulsive disorder] OCD, Tourette’s, schizophrenia, depression, panic disorder, and drug abuse” (2). Additionally, Brockman demonstrated SPECT’s usefulness in choosing between treatments for depression (3).

Our work is based on hundreds of texts and scientific articles, including 26 articles and the chapter on functional imaging in the *Comprehensive Textbook of Psychiatry* that I co-authored (4). Respected hospitals, such as Sierra Tucson, have added SPECT to their armamentarium. Thoughtful clinicians would never use SPECT in isolation, and contrary to what was written about me, I have never recommended such use.

Clinical practice and careful observations have provided researchers with important hypotheses to test, and I have successfully invited researchers to use our database of rigorously diagnosed patients, including SPECT when indicated, to advance neuroimaging, and I extend the same invitation here.

The Society of Nuclear Medicine has never formally approached me to perform a study. Plus, I would never engage in a charade where I was expected to give a diagnosis from a scan. That is not how imaging is or should be practiced. The notion of Adinoff and Devous that SPECT is dangerous is disingenuous. Devous recently wrote, “SPECT and PET have no more risk than MRI-based procedures” (5).

The hope that SPECT and other imaging modalities will be as routine and useful to psychiatry as imaging the heart is to cardiology has animated my practice for nearly 20 years. It, indeed, is starting to happen. My hope is that our journal will help translate imaging research into clinical practice rather than threaten practitioners who have been trying to make it happen.

References

1. Adinoff B, Devous MD: Scientifically unfounded claims in diagnosing and treating patients. *Am J Psychiatry* 2010; 167:598–598
2. Camargo EE: Brain SPECT in neurology and psychiatry. *J Nucl Med* 2001; 42:611–623
3. Brockmann H, Zobel A, Joe A, Biermann K, Scheef L, Schuhmacher A, von Widdern O, Metten M, Biersack HJ, Maier W, Boecker H: The value of HMPAO SPECT in predicting treatment response to citalopram in patients with major depression. *Psychiatry Res* 2009; 173:107–112

4. <http://www.amenclinics.com/meet-dr-amen/credentials/>
5. Devous MD: SPECT functional brain imaging, in *Functional Cerebral SPECT and PET Imaging*. Edited by Van Heertum RL, Tikofsky RS, Ichise M. Philadelphia, Lippincott, Williams and Wilkins, 2009

DANIEL AMEN, M.D.
Newport Beach, Calif.

Dr. Amen is the CEO and owner of Amen Clinics, Inc.

This letter (doi: 10.1176/appi.ajp.2010.10060814) was accepted for publication in June 2010.

Response to Amen Letter

TO THE EDITOR: We appreciate the opportunity to respond to the points Dr. Amen raises. Since we have made major professional and research efforts to investigate the use of imaging modalities for psychiatric diagnosis and treatment, we are acutely aware of the need to assure that any clinical tool, particularly those used in children, must be supported by empirical evidence.

As noted in our letter as well as in the book review by Leuchter (1), there is presently no evidence to support neuroimaging techniques to aid, substantiate, or otherwise illuminate the diagnosis or treatment of psychiatric disorders. The references offered by Dr. Amen do not suggest otherwise. Camargo (2) notes that “Brain SPECT in psychiatric disorders is still investigational. Despite considerable research interest in this area, specific patterns of the various diseases have not been definitely recognized.” Although Carmago goes on to state that “perfusional and receptor imaging findings may be used as an additional diagnostic tool to guide clinicians searching for a definite diagnosis,” no validated examples of this approach were provided. Brockman et al. also did not advocate the use of SPECT in clinical practice. In fact, Brockman et al. (3) specifically noted that the use of SPECT in predicting treatment response “is beyond the sensitivity of this method.”

Dr. Amen’s own publications do not support the use of SPECT imaging in assisting with the diagnosis or treatment of psychiatric disorders. His study of patients with completed suicide includes only 12 subjects (4). His retrospective study of 157 patients showed that regional cerebral blood flow, as measured by SPECT, predicted stimulant response in only 29 of these subjects. While of theoretical interest, these findings do not support the use of SPECT in clinical practice. Dr. Amen’s recent book (5) also offers only anecdotal examples of imaging being useful in the treatment or diagnosis of psychiatric disorders.

The clinical applications of SPECT imaging in children are even more restricted, with only the assessment of epilepsy generally accepted as a diagnostic indication. Indeed, in 2005, the APA Council on Children, Adolescents, and Their Families concluded the following:

“Although knowledge is increasing regarding specific pathways and specific brain areas involved in mental disease states, at present the use of brain imaging to study psychiatric disorders is still considered a research tool. Particular caveats are indicated with regard to brain imaging involving radioactive nucleotides for children and adolescents because