TEXAS NEUROLOGICAL SOCIETY WINTER 2010

Broca's Area

The Voice of Texas Neurology

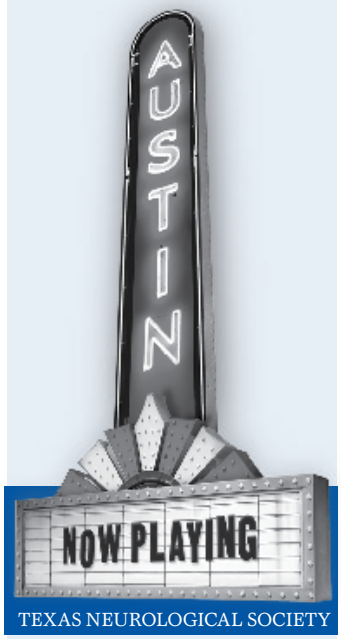
President's Message

Alan W. Halliday, MD

As my tenure as President of the Texas Neurological Society nears its completion, it is time to reflect on some of the activities of the past year. I would like to thank Dr. Sara Austin for the excellent summer program she arranged in Bastrop last July. Sara along with the education committee, chaired by Jerry Bettinger, put together a thoroughly enjoyable educational program that was very well received by all attendees. I can also assure you that the winter conference that Kim Monday has been planning promises to exceed expectations, and that says a lot when you consider the quality of the programs over the past 10 years. Please pay your membership dues as the time grows near. We have a brand new website and you can register for the meeting and pay your dues on line. If you have not already done so, register at our website at texasneurologist.org. Our dues have not changed in over a decade, and they help support our educational programs and our advocacy efforts. Pharmaceutical company support to our CME meetings has become increasingly challenging to obtain, and we strive to maintain the quality of our programs at a reasonable registration fee.

Texas Medicine in general and Texas Neurology in particular fared very well during the past legislative session as bills that were submitted counter to our interests were defeated. However, our foes remain persistent and the TNS must remain vigilant to ensure that medicine and neurology are practiced by trained physicians experienced in providing the optimal care to patients. The citizens of Texas deserve no less.

Finally, I would like to thank my colleagues on the board, Jerry Bettinger, Mark Pretorius, Aziz Shaibani, Sara Austin, Kim Monday, Bill Gilmer, Randy Evans and incoming president, Tommy Yee for all of their support this past year. Putting together two educational programs and dealing with legislative issues and challenges while running busy private practices by serving on the board is time intensive but all have come through when needed. Please support your organization and your incoming president this next year. I can categorically say that it was an honor and privilege to serve as your president and I wish you all the best of luck in all of your future endeavors.



13th Annual Winter Conference

FEBRUARY 5-7, 2010
HYATT REGENCY AUSTIN

More information on page 4

Mark Your Calendar

2010 Winter Conference
February 5-7
Hyatt Regency
Austin

2010 Summer Conference
July 23-24
JW Marriott Hill Country
San Antonio

2011 Winter Conference
February 25-27
Hyatt Regency
Austin

2011 Summer Conference
July 15-16
Westin La Cantera
San Antonio

Editor's Notes

By Randolph W. Evans, MD

I thank all of our contributors for their excellent contributions to the newsletter keeping you current on TNS and current political, coding, practice, and treatment issues. For my initial issues as editors, we had several interesting Broca's biographies. Due to space limitations, we have been using a different feature instead, expert opinions. Some of the expert opinions may be repurposed in "Practical Neurology" (www.practicalneurology.org) which is sent to all of the neurologists in the U.S., with the first in the October issue (Jim Grotta's timely review on, "Assessing and responding to apparent aspirin resistance").

The end of Medicare reimbursement for consultation codes, as discussed in Stuart Black's article, is alarming and frustrating for us all with about a 17% reduction in level 4 consultation reimbursements for the same work. Are new patient evaluations, even when there is no referring physician, really less work anyway? It probably won't be long before private carriers follow the lead of Medicare.

Contemplating the reduction in reimbursement, I was particularly aggravated last week at the increasing number of uncompensated tasks we are asked to do many of which seem poorly justified from our perspective. These tasks may be particularly aggravating to us older physicians who can remember the time before the bs (buncha stuff) slowly infiltrated our practices. Some are from Medicare but most are from private insurers, unfunded mandates. Just to mention a few from last week.

Precertification for neuroimaging. A scan was denied retrospectively. I had to personally call for certification and sit on the phone for 18 minutes before getting approval. On other occasions, the clerk or nurse has your secretary bring you to the phone, often with a busy office full of patients, and then puts you on hold for the certifying physician. I've asked on numerous occasions what specialty the physician is but usually I'm told that their specialty is irrelevant. Is it? One of my cases was a 14 year old with bioccipital infarcts on MRI. I requested a MRA of the neck to exclude dissection. The reviewing physician first asked if I wanted to rule out atherosclerosis. How many discussions should we have to have to explain the imaging protocol for thunderclap headache which is the clinical information we provide? Last week, we had to call again when only a lumbar MRI without contrast was approved on a post-op back. The vast majority of neuroimaging studies requested by neurologists end up by being authorized (Avitzur O. Neuroimaging pre-certification: how to ease the escalating burden. Neurology Today. 2006: 6(19):22-23). Any guesses as to why we are forced through the process? Why are we not compensated for our time?

Faxes and calls from mail order pharmacies. The faxes and calls are increasing. Generic substitutions. Drug interactions. Am I aware of guidelines? One mail order pharmacist demanded that I call her back and wanted to discuss the number of triptans that a patient was taking and her use of preventive medications. I did call her back and told her that this was between the patient and me and felt that her role was to inform me of dangerous drug interactions, etc but not to educate me about migraine treatment because I know a little bit about that topic. I also informed her that she was biased since she was working for a managed care company and her interest was saving pharmacy dollars, etc.

How many well-meaning faxes and phone calls do you want to see warning you about possible life-threatening interactions between triptans and SSRIs and SNRIs? Out of millions of co-prescriptions worldwide, there have been perhaps 7 possible cases (Evans RW. The FDA alert on serotonin syndrome with combined

use of SSRIs or SNRIs and Triptans: An analysis of the 29 case reports. *MedGenMed.* 2007;9:48; Gillman PK. Triptans, Serotonin Agonists, and Serotonin Syndrome (Serotonin Toxicity): A Review. Headache. Published Online: 17 Nov 2009). All uncompensated.

Miscellaneous forms and letters. Disability forms, school forms, family medical leave forms for patients and family members, medical insurance forms, letters for work, forms for nursing homes, home health, etc. Often uncompensated.

Disclosures for CME presentations, publications, and editorial boards. In recent years, as part of publishing articles and books, serving on editorial boards, performing journal peer reviews, and giving CME lectures, I feel increasingly like a witness before a hostile Senate subcommittee asked to disclose potential financial conflicts of interest (COI) and having to complete increasing reams of paperwork with each activity.

A certain degree of transparency may be appropriate but is the pendulum swinging too far? I'm not arguing that COI can't occur and shouldn't be disclosed. But how much disclosure is enough? How important are non-financial COI and which should be disclosed? Do you really pay attention to the list of disclosures which may be pages in length when you read articles? Ask Rachael Reed about the increasing amounts of paperwork required for our courses (CME and grants) which adds to staff time and cost.

Are we better served? CME content is not necessarily valid with subjective guidelines as a study of an epilepsy lecture suggests (Quigg M, Lado FA. Interrater reliability to assure valid content in peer review of CME-accredited presentations. J Contin Educ Health Prof. 2009;29(4):242-5). Hirsch notes: "Indeed, in its recently published report on COI in medical research, education, and practice, the Institute of Medicine defined COI as "A set of circumstances that creates a risk [emphasis added] that professional judgment or actions regarding a primary interest will be unduly influenced by a secondary interest." Editors at *The Lancet* and the *British Medical Journal (BMJ)* similarly noted that finance is only one of many issues that can lead to COI; other factors such as publication pressure, prestige, scientific reputation, career advancement, and even religion can be more potent than dollars in potentially biasing a researcher. Yet today there is a McCarthyesque reaction to the term, *conflict of interest*, with an unstated presumption of guilt until proven innocent (Hirsch LJ. Conflicts of interest, authorship, and disclosures in industry-related scientific publications: the tort bar and editorial oversight of medical journals. Mayo Clin Proc 2009;84(9):811-21. Also see Lanier WL. Bidirectional Conflicts of Interest Involving Industry and Medical Journals: Who Will Champion Integrity? Mayo Clin Proc 2009;84(9):771-5).

Well, this was inexpensive group therapy. I'm sure many of you have more and better examples. But as a group, can't we do something about the unnecessary (from our perspective) precerts, pharmacy faxes, etc that are uncompensated and take up our increasingly less valuable time? (I didn't even discuss gratis patient telephone calls.) Or perhaps we're really slaves to insurance companies and government with no ability to negotiate and we'll look back in fondness to these good old days when we had so little uncompensated busy work to do.

New Medicaid Prior Authorization Requirements

Neurologists will be impacted by the new Medicaid prior authorization requirements for PET and cardiac nuclear imaging services. Two webinars on the changes are scheduled, one on Jan. 13 and one on Jan. 20. The PET and cardiac nuclear imaging guidelines are posted on the TMHP website.

Registration

To register for and participate in a webinar session:

1. Pick a date and time.
2. On your browser, go to the webinar website at http://medsolutions.webex.com/medsolutions
3. Click on the "Training Center" tab at the top of the page.
4. Click the "Upcoming" tab. The appropriate Provider Orientation Sessions will be named "Texas Medicaid - Addition of PET & NCM."
5. Click Register.
6. Enter the required registration information.

Thank you to the Supporters of the 2009 Summer Conference

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13th Annual Winter Conference

FEBRUARY 5-7, 2010 • HYATT REGENCY AUSTIN

Meeting Topics

Friday, February 5

Friday Morning
*P*ediatric Neurology

Friday Afternoon
Dementia
Multiple Sclerosis

Saturday All Day
General Neurology

Sunday Morning
Psychiatry and Headache

Winter Conference Preview

The 13th Annual Winter Conference is going to be held at the Hyatt Regency Austin on Lady Bird Lake. The dates for the Conference are February 5-7.

Friday morning will focus pediatric neurology while the afternoon will focus on dementia. Friday evening will be a welcome reception to catch up with fellow neurologists.

Saturday session topics will include Chronic Traumatic Encephalopathy, an update on Epilepsy Treatments, advances in neurological rehabilitation, and more. Saturday will also feature the TNS business luncheon.

Sunday morning's topics will spotlight Psychiatry and Headache updates and talks.

Register online at www.texasneurologist.org and we look forward to seeing you there!

Legislative Report

By Sara G. Austin, MD

Where to start? First off, Texas neurologists are well represented in legislative issues. Bill Fleming is the president of the TMA, Bill Gilmer is on TexPac, and I'm on the TMA Council on Legislation, and the AAN Government Affairs Committee.

Bill and I attended the TMA legislative retreat in November in Frisco, TX. The evening entertainment was all 6 of the possible candidates for U.S. Senator who have said they would run if Kay Bailey Hutchinson resigns. The group includes several people who have been very supportive of medicine over the years including Florence Shapiro and Elizabeth Ames Jones. John Sharp was also there, along with Michael Williams (RR commissioner), Roger Williams and Bill White, the former mayor of Houston. All in all, an impressive crowd, and the TMA deserves congratulations for getting them all together in one spot.

The purpose of the retreat was to start honing our state issues in preparation for the 82nd legislature. That takes an entire 2-year cycle to prepare for. TMA will continue to push for insurance reform (more transparency), and to protect the tort laws already in place. Work force issues (mostly graduate medical education), Medicaid, public health, corporate practice of medicine, and licensure were also discussed. The state budget has a structural deficit in place (we are $10 billion short before we even start). It was not much of an issue this last legislature because of the economic stimulus money that came in from the federal government. However, it will certainly be in play the next session and will affect the practice of medicine.

Obviously the most interesting issues are federal at this point. As you are aware, both the U.S. House and the Senate have passed bills pertaining to health care. The TMA and AMA have been very involved in making sure that the house of Medicine has a voice. A revised summary chart (PDF) comparing the two bills can be found at www.texasneurologist.org under "advocacy". Both bills are very long, thousands of pages, and touch many facets of the practice of medicine. The bills will now go to conference to reconcile the differences and then both chambers will have to pass them again in the reconciled form before they land on Mr. Obama's desk. I am pretty sure that getting him to sign something will not be difficult. All along he's had almost no agenda for health care reform, except that he wants health care reform, in what ever form Congress can put together. Most people think that the final version will look more like the Senate's bill, as it's been harder to come up with those 60 votes. Here is a brief summary of the bills and of some of the issues most important to medicine and Neurology:

1. Both bills start with insurance reform, including banning lifetime limits, establishing new federal standards for small group and individual policies and excluding preexisting conditions and including guaranteed issue. Both establish greater transparency for insurance companies.

2. The bills create either a national or state insurance exchange to make buying insurance easier.

3. Both bills require most individuals to have coverage by the year 2014. Each bill has differing penalties, but the Senate version imposes a penalty of up to $750/year or 2% of income (whichever is greater) per individual by 2016 for those without coverage.

4. Both bills provide tax credits to individuals under 400% of Federal Poverty level (FPL) to help buy insurance.

5. Both bills expand Medicaid to all adults with income of less than 133% of FPL. This would be a very large expansion of Medicaid in Texas as most of these persons are not covered now. The House bill also includes language increasing Medicaid payments for primary care services to Medicare payment levels. The Senate bill continues payment at state-specific rates. Both pay initially for the state costs of providing coverage to the expanded populations.

6. Both bills, in some way, provide more for long term care, either with an insurance program (House), or more community care assistance (Senate).

7. Both bills authorize money for prevention and wellness programs.

8. The House specifically provides Medicare coverage for consultations for end of life issues, the Senate version does not.

9. Both bills authorize more money for comparative effectiveness research and limit, in some fashion, what the information can be used for (i.e. restricting or not paying for care).

10. Both bills would require reporting and tracking of samples or gifts to physicians (the Sunshine Act as we fondly call it)

11. Both bills increase funding for fraud control and increase penalties to physicians. The Senate bill expands the RAC program.

Legislative Report *(continued)*

12. Both bills establish requirements for biosimilars and provide for a 12 year market exclusivity protection.

13. Both bills try to partially close the 'donut hole' in Medicare Part D. The drug manufacturers are required to provide a 50% discount for drugs purchased during the coverage gap (this would have the effect of enticing more people to stay on brand name drug, which is good for Pharma).

14. The Senate bill establishes the Independent Medicare Advisory Board (IMAB) . The sole goal of this board is to identify ways for Medicare to save money (including physician fee updates), and then establishes a way to fast track the legislative approval process. (The AMA and TMA solidly oppose this board.)

15. Both bills expand the Medicare physician feedback program and by 2012 the Secretary is to provide reports to physicians comparing physicians' patterns of resource use to other physicians.

16. Both bills expand PQRI payments.

17. Both bills provide for a 10% bonus to primary care physicians and general surgeons. This would be an extra cost to Medicare, so the cost would not be deducted from payment to other physicians. A practitioner would only be eligible for the bonus if he received more than 60% of his Medicare income from E&M codes. Unfortunately, 'primary care' included all of the internal medicine subspecialties, but Neurology was excluded.

This has been a major focus of advocacy efforts for the AAN. We have successfully persuaded legislators on both sides of the aisle, in both the Senate and the House, to introduce amendments to include Neurology in the primary care bonus. We are the only cognitive specialty that was excluded. I think that there is general agreement that we should have been included, but so far very few amendments have been allowed to be voted on, including ours. We are now working on a strategy to try to get our amendment included in the conference bill. Being from Texas, I have to say, has not been so useful in this process. Both of our Senators are voting no on everything pertaining to health care reform and most of our Representatives are also Republican and have voted no as well.

18. Both bills change the utilization rate assumption for advanced imaging equipment which will have the effect of reducing payment for these services.

19. Both bills support the establishment of Accountable Care Organizations to try to control costs.

20. Both bills ban new physician owned hospitals in Medicare and for existing hospitals, there are limits on expansion.

21. Both bills eliminate co-insurance in Medicare for preventative services.

22. Both bills pay lip service to tort reform. However, both bills also attempt to extend liability protections under the Federal Tort Claims Act to volunteers at free clinics (Senate bill) or to volunteers at community health centers. There is certainly the possibility that the provisions relating to the development of clinical guidelines could be used as legal standards against physicians that deviate from the standard for any reason.

23. The Senate bill would expand the flexibility of GME programs to allow for training in outpatient settings and in community health centers (CHC's).

24. Both bills would authorize the establishment of a National Health Care Workforce Commission to provide recommendations to Congress about healthcare workforce needs and both expand loan repayment programs already in place. Provisions in both versions of the bill also appear to give non-physician providers the ability to provide more services, and in many instances be treated the same, as physicians.

25. Both bills make a weak effort to streamline and standardize insurance claims processing requirements.

The last issue is the SGR (Sustainable Growth Rate). This is the process that calls for a 21% decrease in Medicare reimbursement starting in January, 2010. The House passed a measure in late November to replace the flawed SGR formula with the MEI (medical economic index) which is what hospitals go by. Representative Michael Burgess (R-TX) was the only republican to vote for this bill (thank you Dr. Burgess). Hospitals have typically gotten a 2-4% raise every year. Compare that to physicians. Our reimbursement by Medicare has increased less than 4% total in the past 10 years. The Senate, with the help of Texas's two Republican Senators, voted down a permanent fix in November. Just this last month, the House and Senate passed a temporary 2 month SGR fix as part of the Department of Defense Budget bill, and there are plans to vote on a permanent repeal once the health system reform legislation is passed.

As Neurologists, I think that the two most important issues that we as a profession need to attend to are the inclusion of Neurology in the primary care bonus, and the repeal of the SGR.

Action alerts from the TMA and the AAN will be coming to your email box this January. Please, please, take the time to send a note. It really matters.

Lastly, please consider contributing to the PAC's that represent your interests (TexPAC and BrainPAC). Even just a small amount to each really makes a difference.

NEW Medicare Rule (CMS CR 6740) Elimination of CPT Consultation Codes

Stuart B Black MD, FAAN, Medical Director of Neurology
Baylor University Medical Center at Dallas
Chair, TNS Coding Committee

In July of 2009, the Centers for Medicare & Medicaid Services (CMS) announced plans to stop paying for outpatient and inpatient Evaluation and Management (E/M) consultation codes. The proposal became effective January 1, 2010 and addresses Part B payment policies paid under the 2010 Final Medicare Physician Fee Schedule (MPFS). The CPT Consultation Codes (99241 – 99245 and 99251 - 99255) have been abolished and are no longer recognized for Medicare Part B payment. CMS expressed concerns with the use of the Consultation Code as early as January 2, 2006 when the revised Medicare Claims Processing Manual listed "clarifications" of Medicare rules in distinguishing a Consultation from a New Patient Referral. Based on the 2006 "clarifications", the terms consultations and referral were mistakenly interchanged.

As indicated in the 1995 and 1997 Evaluation and Management (E/M) Documentation Guidelines, a "Consultation" must be accompanied by a request for consult from the referring physician or health care provider. The suspected or known diagnosis requires determination by the specialist who renders his/her opinion and both the referring physician and consultant specifies a reason for the consultation. To meet the guidelines, a written report to the requesting physician or referring source must be forwarded by the consultant. In addition, it was again emphasized in the 2006 report that in most cases, a consultation is a one – time visit. Ongoing management of the patient by the consultant physician did not meet compliance when reporting a consultation service code. When the consultant assumed the care of the patient, even for a specific condition requiring care by a specialist, that was defined as "transfer of care" and the E/M evaluation was to be reported as a New Patient Referral (99201 – 99205) and not Consultation (99241 – 99245). This translated into economic considerations as well since the CPT Consultation code has always been reimbursed at a higher lever than the New Patient Evaluation.

A number of physician organizations and societies had been urging CMS to delay implementation of this rule, including the American Academy of Neurology, the American College of Physicians and the American Medical Association. In addition to the concerns CMS had regarding what determined inappropriate billing for consultation services, the AMA's CPT Editorial Panel recently modified the introductory language in CPT to more precisely define what constitutes a consultation and a transfer of care. These modifications will also appear in the 2010 CPT Professional Edition. However, in response to these changes, a number of specialty associations and societies, including the AAN, have emphasized that in our current health care delivery system specialists, such as neurologists, are "consulted" by primary care physicians and other physicians to determine a patient diagnosis. Because of the complexity in evaluation and management of various medical problems, it is often necessary for the consultant to become the principal physician involved in the patient's care. More often than not, consulting physicians have no pre–existing relationship with the patient. This means that the evaluation usually requires a more extensive history and physical examination, often a review of the patients medical records, and a more complex medical decision making process. The importance of consultation services such as provided by neurologists, allows expert advice and care for those patients who require the expertise of a specialist. In addition, proper diagnosis in a timely fashion exemplifies the type of quality of care most Americans have come to expect from our health care system.

In addition, it should be emphasized that there are also estimates that the combined changes in the 2010 proposals would boost payments to internists, family physicians, general practitioners and geriatric specialists. Since by law, the CMS proposal must be budget neutral, subspecialty groups as neurology would be negatively affected by the proposed changes. Under the original proposal, Medicare would put the fees paid to specialists for E/M services on a par with those of primary care physicians. The provisions of the 2009 proposal indicated that the savings from decreased specialist reimbursements would be used to increase payments to physicians providing primary care.

However, under the new rules, CMS indicated there will be an increase in the Practice Expense (PE) portion of the RVU's for specialties as neurology. The concerns are these increases would still be less than the prior reimbursements for consultation services. To review how the increase in the PE RVU would impact reimbursements, the RBRVS system assigns every CPT code a total number of Relative Value Units (RVU). Each RVU has three components:

1. Physicians Work (PW) = about 52%
2. Practice Expense (PE) = about 44%
3. Medical Liability Insurance (MLI) = about 4%

All RVU components are multiplied by the Geographic Practice Cost Indices (GPCI) which adjusts for geographic cost differences. A Conversion Factor (CF) for each CPT code translates the RVU's into a dollar amount. Therefore, Payment = RVU x Conversion Factor. An increase in the PE RVU would produce an increase in reimbursements for all E/M services including both outpatient and inpatient hospital consultations. Under the new law which became effective January 2010, inpatient consultations should be billed as an Initial Daily Care visit (99221 – 99223) and subsequent inpatient consults are to be billed with the daily care codes (99231 – 99233). The admitting physician ("principal physician") of record should append modifier A1 to the E/M code when billed. This modifier is to identify the physician who oversees the patient's care from all other physicians who may be furnishing specialty care. This also means that any other physician who performs an initial evaluation on the patient (such as a "Neurological Consultation") will bill only the E/M code for the complexity level performed. As indicated above, in the office or outpatient setting, physicians should report CPT codes 99201 – 99205 or 99211 – 99215, depending on the complexity of the visit and whether the patient is a new or established patient.

In the past few months, due to the proactive measures taken by a number of physician organizations including the American Academy of Neurology, some congressional leaders have come to recognize that time is needed to ensure that CMS works with the physician community to find some common ground other than eliminating appropriate reimbursements for consultation services. On December 10, 2009, U.S. Senator Arlen Specter filed an amendment (SA 3136) that would have required the CMS to delay for one year implementation of its decision to eliminate payments for consultation service codes. Unfortunately, this amendment was not addressed before the January, 2010 deadline. The goal was to include this amendment in the Senate version of Health Care Reform. **The Sec.3143. Revision To Payment For Consultation** Codes includes:

> (a) *Temporary Delay of Elimination of Payment for Consultation Codes*....the Secretary of Health and Human Services shall not, prior to January 1, 2011, implement any provision contained in a final rule that eliminates or discontinues payment for consultation codes under the physician fee schedule and part B of title XVIII of the Social Security Act
> (b) *Evaluation Period*...During the period prior to January 1 2011, the Secretary of Health and Human Services shall consult with the Current Procedural Terminology Editorial Panel of the American Medical Association for the purpose of developing proposals to...
>
> > (1) modify existing consultation codes or establish new consultation codes to more accurately reflect the value provided through such consultation services; and
> > (2) minimize coding errors.

The elimination of the CPT E/M consultation codes not only has medical economic implications but also has stimulated much debate regarding the role of specialized medical services. This also includes discussion differentiating the difference between a physician who provides "primary" patient care and a physician who becomes the "principal" care provider. Although those considerations are beyond the scope of this review, a clear understanding of reimbursement for the roles that specialists as neurologists play in the ongoing management of more complex medical problems must be addressed. We also do not know how payers other than CMS would deal with these proposed changes. As of today, there is still no declaration as to whether or not private insurers will follow the CMS lead in whatever Medicare changes are finally adopted. Whatever the outcome, it is important that neurologists remain proactive in keeping updated with these new proposed rules, their implementation, and how to remain compliant with the E/M CPT coding regulations.

Expert Opinion #1

Viveca Bhat, M.D., Clinical Assistant Professor, Neurology Department
University of Texas Health Science Center at San Antonio

Should TIA be defined by duration?

The American Heart Association/American Stroke Association Stroke Council published new guidelines on the definition and evaluation of Transient Ischemic Attacks (TIA)(Easton JD et al. Stroke, 2009 : 40: 2276-93) The guidelines state that TIA is "a transient episode of neurological dysfunction caused by focal brain, spinal cord, or retinal ischemia, without acute infarction." This tissue-based, rather than time-based, definition encourages all patients who have transient neurologic deficits to undergo neuro-imaging (preferably with diffusion-weighted imaging (DWI) on MRI within a 24-hour period. In short, if all symptoms/signs resolve in <24 hrs but MRI DWI is positive, the ischemic event would be called a stroke instead of a TIA.

The authors argue that this tissue-based definition is preferable because the older definition of neurologic symptoms that resolve in 24 hours is not only arbitrary, but it does not accurately demarcate patients with and without tissue infarction. One-third of TIA patients defined by a <24 hours duration exhibit the signature of new infarction on MRI DWI. They also argue that tissue-based definitions are the rule for ischemia affecting other organs, (i.e. angina versus myocardial infarction in cardiac patients) and neurologic patients shouldn't be any different.

In some situations, the definition of ischemic stroke will not be altered, such as prolonged deficits lasting several days and with a clinical syndrome consistent with a small deep infarct. This is because some infarcts cannot be visualized even with state of the art imaging. But based on the new definition of TIA, ischemic stroke will be defined as infarction of central nervous system tissue (preferably based on diffusion-weighted MRI). For patients who do not receive a detailed neurodiagnostic evaluation, it may be difficult to determine whether stroke or TIA is the most appropriate diagnosis. The guidelines state that for patients with transient symptoms who cannot undergo adequate neuro-imaging, a term such as acute neurovascular syndrome be used.

The guidelines state that risk stratification schemes can be help with the decision to admit acute TIA patients to the hospital. The recent ABCD2 score stratifies risk based on TIA score points: age >= 60 (1 point); blood pressure >= 140/90 mm Hg on first evaluation (1 point); clinical symptoms of focal weakness with spell (2 points) or speech impairment without weakness (1 point); duration >=60 minutes (2 points) or 10 to 59 minutes (1 point); and diabetes (1 point). In combined validation cohorts, 2-day risk of stroke was 0% for scores of 0 or 1, 1.3% for 2 or 3, 4.1% for 4 or 5, and 8.1% for 6 or 7. However, this prediction rule does not incorporate imaging findings, so many of those formerly diagnosed as TIA could now be stroke based on the new tissue-based definition.

The guideline suggests that TIA patients be hospitalized if they present within 72 hrs and have an ABCD2 score >3 or if evaluation cannot be completed within 2 days on an outpatient basis. They argue that hospitalization can increase the potential for more rapid, frequent use of tPA, facilitate diagnostic evaluation, allow for cardiac monitoring for paroxysmal atrial fibrillation and allows for better adherence to secondary prevention therapy. However, it should be noted that: "no randomized trial has evaluated the benefit of hospitalization or the utility of the ABCD2 score in assisting with triage decisions."

In summary, their Class I recommendations include that patients with TIA should undergo neuro-imaging within 24 hours of symptom onset, "MRI including DWI is preferred" and if not available, CT should be performed; noninvasive imaging of cervicocephalic vessels should be performed; and lastly, patients with suspected TIA should be evaluated as soon as possible after an event.

Additional tests recommended for acute TIA patients include routine blood studies (including CBC, chemistry panel, PT/INR, PTT, fasting lipid profile), electrocardiogram (ECG) "as soon as possible," prolonged cardiac monitoring "in patients with unclear origin after brain imaging and ECG" and echocardiography "is reasonable…especially [when] no cause has been identified."

How these new guidelines will affect epidemiological studies, clinical practice and coding and reimbursement remain to be seen.

Expert Opinion #2

George J. Hutton, MD, Associate Professor, Department of Neurology, Assistant medical Director
Maxine Mesinger Multiple Sclerosis Comprehensive Care Center, Baylor College of Medicine

Case

This 35 year old woman has relapsing remitting multiple sclerosis doing well on immunotherapy.

Questions: Should she and other multiple sclerosis patients have their Vitamin D3 levels routinely checked? Would she and other MS patients benefit from Vitamin D3 supplementation? If so, how much? What might be the effect on the immune system? Should calcium be added and if so, specifically what dose? Should Vitamin D3 level be measured on supplementation? What level is too high? What side effects might occur from D3 and calcium supplementation?

Discussion

Although the etiology of multiple sclerosis remains unknown, most cite a genetic susceptibility upon which an environmental trigger acts, to initiate an autoimmune process of CNS damage. The role of vitamin D has become central to these discussions over the past few years. Evidence from epidemiologic studies of geographic distribution, sun exposure and vitamin D intake, as well as experimental animal models of MS, indicate a possible influence of vitamin D on disease susceptibility. There is also some evidence of possible disease modifying properties of vitamin D in MS.

Vitamin D (cholecalciferol) in humans is obtained from the diet and supplements or synthesis in the skin by ultraviolet B radiation (sunlight) conversion of 7-dehydrocholesterol (pre-vitamin D). The average vitamin D intake in the US is less than 400 IU/day and most Americans have vitamin D levels in the deficient or insufficient range. One day of whole-body sun exposure is equivalent to a single dose of 10,000-25,000 IU vitamin D. Vitamin D is hydroxylated in the liver to 25-hydroxy vitamin D (25(OH)D), the major circulating form of vitamin D that reflects vitamin D status in the body. 25(OH)D is further converted to the hormonally active form 1,25-dihydroxy vitamin D (1,25(OH)2D) in the kidneys. Vitamin D and parathyroid hormone regulate calcium homeostatsis by cellular uptake and renal retention. The optimal serum levels of 25(OH)D should be at least 75 nmol/L, but preferably 90-100 nmol/L. A daily dose of 1,000 IU vitaminD3 is needed to bring concentrations up to 75 nmol/L 25(OH)D in 50% of the population, but as much as 4,000 IU/day to bring about 90% of healthy young adults to a level of more than 75 nmol/L. Daily intake of 4,000-10,000 IU/day seems to be safe in young adults.

Sunlight exposure and dietary intake thus play an important role in vitamin D status. Skin color, gender, age and body fat also play a role. Elderly and dark skinned people produce less sunlight induced vitamin D. Body fat absorbs vitamin D and influences serum 25(OH)D. Men tend to have higher levels than women. These facts may play a role in recommendations regarding supplementation.

There are several lines of evidence supporting the importance of vitamin D in MS. Inverse correlation between MS prevalence and sunlight has been reported. This may in part explain the much discussed North-South gradient in MS. A study of American military personnel showed that low 25(OH)D levels in adolescence may be associated with an increased risk of developing MS later in life. A 41% decrease of incidence of MS for every 50 nmol/L increase in 25(OH)D was estimated for the white population. Low serum 25(OH)D levels have been reported in 50-70% of different MS populations. Lower vitamin D levels have been reported during relapses in relapsing-remitting MS patients, and high vitamin D levels have been associated to low relapse activity. A recent report showed that children developing MS after presenting with a clinically isolated syndrome (CIS) had significantly lower serum levels of 25(OH)D compared to those that did not develop MS.

Most of the biologic effects of 1,25(OH)2D are mediated by the vitamin D receptor. This induces receptor mediated anti-inflammatory processes by reducing expression of MHC class II, surface co-stimulatory molecules and pro-inflammatory cytokines in monocytes/antigen presenting cells. It also inhibits T and B lymphocyte proliferation, reduces expression of pro-inflammatory cytokines and induces apoptosis of activated T lymphocytes.

Evidence is beginning to accumulate of a complex interaction between genetic susceptibility to MS and the role of vitamin D. Expression of the MS associated HLA class II allele is influenced by vitamin D. Certain vitamin D receptor (VDR) gene polymorphisms have been shown to have an influence on disease susceptibility. Other VDR gene polymorphisms have been shown to influence disability progression in MS patients independent of sunlight exposure.

The serum component of vitamin D which is best to measure is 25(OH)D, with a half-life of several weeks. This measurement is representative of an individual's overall vitamin D status. The internationally accepted

norms fall between 75 and 200 nmol/L. with insufficiency existing below 75 nmol/L and deficiency below 25 nmol/l. The 75 nmol/L level corresponds to the serum level below which the parathyroid hormone is stimulated by lack of vitamin D and below which osteoporosis becomes frequent. Although 1,25(OH)2D serum levels can be obtained, these are not as useful as the half-life is only 4-6 hours.

Much of the recent excitement regarding the role of vitamin D in MS can be traced to a Canadian study which was recently reported at several meetings. This story was picked up by medical and lay press and widely discussed. In this study 50 MS patients were randomized into one of two groups; the treatment group took vitamin D in an escalating dose up to 40,000 IU/day while the control group were allowed to take their usual regimen (up to 4,000 IU/day). Based on the dose escalation, the treatment group took a mean of 14,000 IU/day over the course of the 1-year study. All subjects also took calcium phosphate at 1,200 mg per day. This was primarily a safety study, with some clinical endpoints as secondary outcomes. The main outcome was that the subjects had no hypercalcemia, hypercalciuria or parathyroid dysfunction, despite having mean serum 25(OH)D values peaking at over 400 nmol/L. A widely published secondary outcome was that the treatment group had fewer relapses with a 41% reduction in annualized relapse rate, compared with a reduction of 17% in the control group. However, the study was not powered to assess clinical outcomes.

So where does this leave us with respect to the use of vitamin D supplementation in our MS patients? Whether one fully accepts the above data as supporting the role of vitamin D supplementation in MS or not, there are clear non-neurologic medical reasons to avoid hypovitaminosis D. Therefore, there is good rationale to check vitamin D serum status in MS patients, which is best accomplished by checking serum 25(OH)D. When insufficient or deficient levels are found, supplementation options include OTC vitamin D3, commonly available in doses up to 2,000 IU or prescription vitamin D2 (ergocalciferol), available as 50,000 IU orally. A useful guideline is that most patients can be sufficiently supplemented with oral OTC vitamin D3 4,000 IU daily. It is important before starting this treatment to check that there is no hypercalcemia and to monitor vitamin D and calcium levels after several months of supplementation. One need not fear hypercalcemia or "vitamin D intoxication" if the patient has normal or low calcium before supplementation, and if one uses doses less than 10,000 IU/day. If hypercalcemia were to develop, one might expect signs to include neurologic ones such as muscle twitching, weakness and depression, among others, but this is not expected with these moderate levels of supplementation. Some advocate adding calcium supplement of 1,200 mg daily as there is evidence that vitamin D and calcium work synergistically. Even those with 25(OH)D levels above 80 nmol/L should be maintained on supplementation to maintain these levels. There are no strict guidelines on dosage adjustments for individual levels, so it seems safe and prudent to recommend 4,000 IU daily for most of our MS patients.

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Member News

Susan Blue, MD was awarded the Gold-Headed Cane Award for leadership and dedication above and beyond the medical district's skyline.

Dr. Blue, who was on the building committee for the Tarrant County Academy of Medicine, led the way for the new TCAM/TCMS building now part of the Fort Worth skyline.

Congratulations to William S. Gilmer, MD, who will be installed as president of the Harris County Medical Society on Friday, January 22, 2010 in Houston.

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