Editor’s note: The process of the 2-minute mini-lecture is to get a commitment, probe for supporting evidence, reinforce what was right, correct any mistakes, and teach general rules. David Anthony, MD, from Brown University authored this scenario in which he (Dr A) works with a third-year student (M3) in considering when to screen a patient for Chronic Obstructive Pulmonary Disease (COPD).

Dr A: (after the student has finished a presentation of a 44-year-old man without concerns here for a complete physical) Good job with your presentation. Now are there any screening tests you would recommend he get?

M3: Well, he just had his fasting lipids and fasting glucose done last year, and they were fine. I don’t think he needs those again this year. His PHQ-2 was normal today, and he won’t need colon cancer screening until he is 50. I am not sure he needs any other screening tests today.

Dr A: Good. Here is something else to consider: he is a smoker with a 40 pack-year smoking history. You did a nice job counseling him about quitting today, but do you think he needs screening for COPD?

M3: I have been somewhat confused about this. It seems to make sense on one level, since he is at increased risk as a smoker. Also, most people with mild COPD don’t recognize its symptoms. It seems like a situation where screening could lead to early detection and better outcomes. I don’t understand why the United States Preventive Services Task Force (USPSTF) actually advised against screening; they gave it a “D” recommendation.

Dr A: You have all the facts correct. In addition, the American College of Physicians (ACP) recently issued a joint guideline with the American College of Chest Physicians (ACCP) and two other agencies that agreed with the USPSTF.¹ They concluded that the benefits of treating even symptomatic COPD are small at best, without any evidence of a decrease in hospital admissions or death. Also, screening spirometry can produce false positives and mislabel healthy people with COPD.

M3: So in people who don’t even have symptoms, the likelihood of benefit is even smaller. I guess they conclude that there is an identifiable risk of harm, with only a small chance of benefit.

Dr A: That’s exactly right. Let me now ask you this: What would be the best thing our patient could do for his health?

M3: He could quit smoking. But I would place his stage of change at “precontemplative” today.

Dr A: Precisely! As it turns out, there is some evidence that screening spirometry can reduce smoking rates. A well-designed randomized trial published in 2008 showed that performing spirometry on adult smokers paired with showing them their Lung Age doubled the rate of smoking cessation.² Are you familiar with the concept of Lung Age?

M3: Yes. I believe it is a comparison of a patient’s FEV1 with the age at which it is the average FEV1 of non-smokers. Thus, if your FEV1 is that of the average 65 year old, your Lung Age is 65. I’ve never been quite clear on why this is helpful.

Dr A: That is a good question, and we are not quite clear on why it works. Lung

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COPD Screening
continued from page 1

Age was developed to convey spirometry results to patients in a way that is understandable. As it turns out, people also react emotionally to an “age” in a way that is different from other types of numbers (such as a percent predicted). This type of an emotional response has also been noted for the related concept of HeartAge, which is based on a patient’s Framingham Heart Score.

M3: So how do you decide whether or not to do spirometry on your patients?

Dr A: Well here we have a familiar case of competing guidelines. While the USPSTF and others recommend against screening, the Global Initiative for Chronic Obstructive Lung Disease (GOLD) recommends offering screening spirometry to smokers on the basis of improved early detection and the possibility of improved smoking cessation rates. My main concern for our patient, which you correctly identified, is that he quit smoking. If some more information would help him decide to quit, then I order spirometry, and I make sure to show him his Lung Age.

M3: So you tailor it to your patient’s stage of change?

Dr A: Exactly. And to whether he feels the extra information will make him change his mind.

M3: Do you have a suggestion where I can read more about this?

Dr A: Well, yes. Your clerkship is using the fmCASES isn’t it? There is a good case on COPD there that reviews these guidelines, how you make a diagnosis, and how you counsel patients to quit smoking. You can also go to http://guidelines.gov and click on “Guideline Syntheses.” There you will find a comparison of some of the major guidelines regarding the diagnosis and management of COPD. Also, the Family Physicians Inquiry Network produced an evidence-based medicine synopsis of the article with some practical information about how to implement screening at http://www.jfponline.com/Pages.asp?AID=6648. http://www.jfponline.com/Pages.asp?AID=6648

References


Alec Chessman, MD, Medical University of South Carolina, Editor

Clinical Guidelines That Can Improve Your Care

By Diana L. Heiman, MD, Quillen College of Medicine, ETSU

The therapeutic challenge of painful diabetic peripheral neuropathy (DPN) presents to my office on a regular basis. Updated in 2011, this evidence-based guideline reviews the best and most effective options for treatment of your patients.1

As far as pharmacological agents, anticonvulsants, antidepressants, opioids, and other agents were evaluated in the literature. The best evidence in the anticonvulsant category for decreasing pain and allowing for uninterrupted sleep is from the use of pregabalin (Lyrica). Other agents that are probably effective for relieving pain are gabapentin (Neurontin) and sodium valproate (Depacon). Lamotrigine (Lamictal) and oxcarbazepine (Trileptal) are probably not effective for decreasing the pain of DPN, and the data on topiramate (Topamax) is conflicting as far as leading to pain relief. Overall, although some of the anticonvulsants lead to pain relief, none of them improve function.

Moving on to antidepressants, amitriptyline (Elavil), duloxetine (Cymbalta), and venlafaxine (Effexor) all are probably effective at reducing the pain of DPN. No data exist that suggest one is preferable over the others with regard to pain, but duloxetine and venlafaxine both also improve quality of life. Venlafaxine is also has additive benefit when used with gabapentin versus placebo. There is insufficient evidence to recommend using desipramine, imipramine, fluoxetine, or the combination of nor-triptryline and fluphenazine.

Now on to opioids, often the most difficult to get people to avoid. The data from one well-done clinical trial suggested that dextromethorphan decreases pain from DPN and also continued on page 3
improves quality of life. Lower-quality evidence suggests that morphine sulfate, tramadol, and oxycodone are also probably effective in reducing pain from DPN, but no effect on quality of life is seen. No evidence exists to suggest that one is better than any of the others, and these medications are associated with significant side effects in a high percentage of patients. They are also associated with new pain syndromes such as rebound headaches and tolerance/dose escalation. Risks of use must be balanced with benefit and lack of response to other agents.

Capsaicin cream, Lidoderm patch, and isosorbide dinitrate spray are probably beneficial in decreasing DPN pain, but clonidine, pentoxyfilline, and mexiletine do not show evidence of benefit. Although effective, Capsaicin is often not well tolerated due to the burning sensation on the skin especially with warm water contacting the skin and in the heat of the summer. The data behind vitamin use and α-lipoic acid are insufficient to recommend for or against their use.

Finally, a non-pharmacologic treatment that is beneficial in reducing pain from DPN is percutaneous electrical stimulation. Electromagnetic field treatment, low-intensity laser treatment, and Reiki therapy are not likely beneficial, and there is insufficient evidence to recommend for or against amitriptyline plus electrotherapy.

Table 1 below summarizes the recommended beneficial treatments and doses.

Reference


Caryl Heaton, DO, UMDNJ-New Jersey Medical School, Editor
Diana Heiman, MD, University of Connecticut, Coeditor

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Table 1
Summary of Recommendations

<table>
<thead>
<tr>
<th>Level</th>
<th>Recommended drug and dose</th>
<th>Not recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level A</td>
<td>Pregabalin, 300-600 mg/d</td>
<td>Oxcarbazepine</td>
</tr>
<tr>
<td>Level B</td>
<td>Gabapentin, 900-3,600 mg/d</td>
<td>Lamotrigine</td>
</tr>
<tr>
<td></td>
<td>Sodium valproate, 500-1,200 mg/d</td>
<td>Lacosamide</td>
</tr>
<tr>
<td></td>
<td>Venlafaxine, 75-225 mg/d</td>
<td>Clonidine</td>
</tr>
<tr>
<td></td>
<td>Duloxetine, 60-120 mg/d</td>
<td>Pentoxifylline</td>
</tr>
<tr>
<td></td>
<td>Amitriptyline, 25-100 mg/d</td>
<td>Mexiletine</td>
</tr>
<tr>
<td></td>
<td>Dextromethorphan, 400 mg/d</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Morphine sulphate, titrated to 120 mg/d</td>
<td>Magnetic field treatment</td>
</tr>
<tr>
<td></td>
<td>Tramadol, 210 mg/d</td>
<td>Low-intensity laser therapy</td>
</tr>
<tr>
<td></td>
<td>Oxycodone, mean 37 mg/d, max 120 mg/d</td>
<td>Reiki therapy</td>
</tr>
<tr>
<td></td>
<td>Capsaicin, 0.075% QID</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Isosorbide dinitrate spray</td>
<td>Electrical stimulation, percutaneous nerve stimulation ×3-4 weeks</td>
</tr>
</tbody>
</table>
The ability to rapidly retrieve and digest pertinent information for clinical decisions is one of the most critical skills for primary care physicians. One challenging aspect of information retrieval remains the relative value and usability of any given tool. Here are some new options that I have used for clinical care as well as education.

Knalij (pronounced knowledge) is a Web-based tool (http://www.knalij.com/) that permits users to search PubMed by having them interact with data maps that take advantage of our innate ability for pattern recognition through visualization. This program recently won an award from the National Library of Medicine (NLM) for its ability to drastically reduce the time for knowledge discovery because of its unique user interface. I was able to rapidly learn to use this to answer questions about hospitalized patients, as well as demonstrate it to learners at a recent Information Mastery event.

Another new resource is PubMed Health. This is an NLM search site focused on Clinical Effectiveness Reviews. (http://www.ncbi.nlm.nih.gov/pubmedhealth/). It has Evidence Based Reviews that are from the following US and international organizations:

- Agency for Health Care Research and Quality
- Centre for Reviews and Dissemination
- The Cochrane Collaboration
- German Institute for Quality and Efficiency in Health Care
- National Cancer Institute
- National Institute for Health and Clinical Excellence guidelines program
- National Institute for Health Research-Health Technology Assessment Programme
- Oregon Health & Science University’s Drug Effectiveness Review Project
- Department of Veterans Affairs’ Evidence-based Synthesis Program

Within a minute I was able to find the best evidence on whether to get genetic testing in a hospitalized patient prior to initiating warfarin therapy that ran counter to a resident’s recommendation from a specialist physician.

Finally, the “Electronic Preventive Services Selector” or ePSS (http://epss.ahrq.gov/PDA/index.jsp) is a good resource for prevention and screening information from the Agency for Healthcare Research and Quality (AHRQ). It is available in many different formats, including Web-based and all Smartphone operating systems. This tool permits a clinician or learner to enter a few details about a patient such as age, gender, pregnancy status, smoking status, and whether they are sexually active and then returns to them screening and prevention recommendations organized by level of evidence. It also provides additional details about the recommendation including related clinical information, rationale for the recommendation and access to a number of linked Web-based tools, articles, and patient education resources. I recently had a medical student working with me who was having difficulty deciding what screening test to request for patients because of her prior experience observing too many tests being ordered. After downloading this as an application to her IPhone she was able to quickly review information about appropriate prevention and screening and became a star.

Go ahead and try some of these new tools; they are easy to learn to use and may well enhance your clinical practice and teaching experience.

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Thomas Agresta, MD, University of Connecticut, Coeditor
Does Wearing Sunglasses Prevent Cataracts?

By Jerry Yuan, DO, and Timothy Bergan, DO, Naval Hospital Pensacola, Pensacola, FL

Evidence-based Answer

Probably. A patient’s sun exposure history is positively associated with the development of cataracts. (SOR: C, based on heterogeneous case-control studies.) Wearing sunglasses to decrease exposure likely reduces the risk of cataract formation and is recommended. (SOR: C, based on a case-control study and expert guidelines.)

A case-control study of 2,520 patients, aged 65 to 84 years with sun exposure since age 30, showed the risk of a cortical cataract increased with increased exposure history. The quartile of patients with the highest sun exposure history (>0.024 Maryland sun-years [MSY], 75.9 J/cm2) had an age-adjusted OR of 1.14 (95% CI, 1.04–2.38; P=.03) for cortical cataract when compared with the quartile who had the lowest sun exposure (≤0.004 MSY).¹

A Japanese case-control study of 661 people (330 with cataract and 331 controls) found an increased chance of having both cortical and nuclear cataract with increased ultraviolet (UV) B exposure at almost all age ranges. The association was strongest for nuclear cataract, and it was also stronger for women than for men. For women, an adjusted OR of 2.3 (95% CI, 1.3–4.5) was found for the association between nuclear opacity and lifetime cumulative UVB exposure.³

Sunglasses may afford some protection by shielding the lens from UV radiation. A case-control study compared 195 cases with 159 controls in the same region. Fifteen percent of patients with cataracts reported sometimes wearing sunglasses from ages 20 through 29, while 27% of persons without cataracts reported the same (OR 0.48; 95% CI, 0.26–0.87).⁴ This protective effect was not found to be statistically significant at other ages.

Due to the association between long hours in the sun and cataracts,³ the American Academy of Ophthalmology recommends wearing 99% and above UV-absorbent sunglasses at all times when outdoors. In particular, they should be worn during the summer, when at the beach or in the water, when participating in winter sports (especially at high altitudes), and when using medications that can cause photosensitivity.⁵

Acknowledgments: The opinions and assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the Medical Department of the US Navy or the US Navy Service at large.

References


SOR—strength of recommendation

LOE—level of evidence

Jon O. Neher, MD, University of Washington, Editor

HelpDesk Answers are provided by Evidence-based Practice, a monthly publication of the Family Practice Inquiries Network (www.fpin.org).
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