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Clinical pathology abstracts editor: Deborah Sesok-Pizzini, MD, MBA, associate professor, Department of Pathology and Laboratory Medicine, Perelman School of Medicine, University of Pennsylvania, Philadelphia, and medical director, Blood Bank and Transfusion Medicine, Children's Hospital of Philadelphia.

Effects of fish oil in recent-onset rheumatoid arthritis: a patient study

The omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaneonic acid (DHA), which are found in fish oil, can suppress synthesis of the omega-6 proinflammatory eicosanoids prostaglandin E2 and leukotriene B4. The effects of fish oil as a dietary supplement in rheumatoid arthritis have been studied in randomized, controlled trials for patient-assessed pain, morning stiffness, number of painful or tender joints, and non-steroidal anti-inflammatory drug consumption. The authors conducted a study to examine the effects of high- versus low-dose fish oil in early rheumatoid arthritis in the context of a treat-to-target protocol of combination disease-modifying anti-rheumatic drugs (DMARDs). Patients who had rheumatoid arthritis for less than 12 months and were DMARD naïve were enrolled and randomized 2:1 to fish oil at a high dose or low dose (control group). These groups were given 5.5 or 0.4 g/day of the omega-3 fats. All patients received methotrexate, sulphasalazine, and hydroxychloroquine. DMARD doses were adjusted according to an algorithm based on disease activity. The primary outcome measure was failure of triple DMARD therapy. Results showed that the failure of triple DMARD therapy was lower (hazard ratio=0.28 unadjusted and 0.24 adjusted) for smoking history, shared epitope, and baseline anti-cyclic citrullinated peptide. Furthermore, the rate of remission was significantly greater in the fish oil group compared with the control group. No differences between groups were noted with regard to methotrexate dose, DAS28-erythrocyte sedimentation rate, modified health assessment questionnaire, or adverse events. The authors concluded that these results show that fish oil is associated with benefits additional to those achieved by combination treat-to-target DMARDs with similar methotrexate use in early rheumatoid arthritis. These results indicate that fish oil has benefits for increased rates of remission and decreased drug use.

Proudman SM, James MJ, Spargo LD, et al. Fish oil in recent onset rheumatoid arthritis: a randomized, double-blind controlled trial within algorithm-based drug use [published online ahead of print Sept. 30, 2013]. *Ann Rheum Dis.* doi:10.1136/annrheumdis-2013-204145.

Correspondence: Susanna M. Proudman at sproudman@internode.on.net

Measures to better understand and address inappropriate laboratory utilization

Utilization review is essential to laboratory quality improvement. Ordering the appropriate test at the appropriate time helps prevent misleading laboratory test results that generate unnecessary patient procedures or incorrect diagnoses. The consumer advocacy group Consumer Affairs has partnered with the American Board of Internal Medicine's Choosing Wisely campaign to reduce unnecessary and potentially harmful laboratory tests. The authors conducted a systematic review in which they described the evolution of lab test audits in reference to three historical barriers: confusion surrounding the definition of "appropriate" laboratory utilization, reliance on manual chart review, and lack of leadership to benchmark laboratory services. Their study updates the answer from a 1998 review that asked, "Do we know what inappropriate utilization is?" The authors' systematic literature review noted that audits performed without manual chart review (database query) have dramatically increased since the mid-1990s. Of interest, most of these utilization audits do not involve any author with a pathology or laboratory medicine affiliation. Current literature defines inappropriate laboratory utilization as any test order in violation of a guideline from a government or professional society. The authors suggest that future work include creating a standard for reporting clinical laboratory audits. This would aid in comparing adherence to appropriate guidelines. The authors concluded that literature consensus defining inappropriate utilization, in combination with database technology, has removed key obstacles to audits. Leadership is needed to unify and benchmark laboratory

utilization.

Hauser RG, Shirts BH. Do we now know what inappropriate laboratory utilization is? *Am J Clin Pathol.* 2014;141:774–783.

Correspondence: Dr. Ronald Hauser at ronald.hauser@yale.edu

Development and validation of a recurrent Clostridium difficile risk-prediction model

Initial Clostridium difficile infection is a serious and costly condition that has increased in volume and severity in U.S. hospitals. Of particular concern is the recurrence of Clostridium difficile infection (rCDI). Reports of randomized control trials with up to 25 percent of patients developing rCDI have raised concerns about the effects of rCDI on quality of life and survival. The authors conducted a study to develop a predictive model for rCDI based on factors present at initial CDI (iCDI) onset. The retrospective cohort study involved adult patients with an inpatient iCDI from 2003 through 2009. The study results showed that among the 4,196 patients enrolled, 425 (10.1 percent) developed rCDI. Six factors were associated with development of rCDI: case status as community-onset health care associated, two or more hospitalizations in the prior 60 days, new gastric acid suppression, fluoroquinolone and high-risk antibiotic use at the onset of iCDI, and age. In multivariate analyses, intensive care unit stay was protective against rCDI. The model's negative predictive value was persistently 90 percent or higher, so the absence of any of the six factors in a patient with iCDI reduced the probability of a rCDI episode to 10 percent or less. The authors concluded that these results serve as the basis of a model to predict iCDI patients' risk of recurrence. They suggest that predicting who may experience recurrence may help identify patients in need of early aggressive care for iCDI.

Zilberberg MD, Reske K, Olsen M, et al. Development and validation of a recurrent Clostridium difficile risk-prediction model [published online ahead of print April 4, 2014]. *J Hospital Med.* doi:10.1002/jhm.2189.

Correspondence: Marya D. Zilberberg at evimedgroup@gmail.com