



## Editorial

## Introducing “Evidence for clinical practice”



Combining alternative medicine and conventional medicine approaches into an integral whole is called integrative medicine [1]. Combining the best research evidence with clinical expertise and patient values into an integral whole is called evidence-based medicine [2]. Evidence-based medicine (EBM) is neither alternative medicine nor conventional medicine (though the expectation for evidence-based medicine is increasingly conventional). Both integrative medicine and evidence-based medicine are closely aligned if not just different views to providing holistic care.

Finding the best research evidence at the moment you need it is a challenge for clinicians, regardless of domain of practice. To address this challenge, *DynaMed* was created with a mission to provide the most useful information to health care professionals at the point of care. It is a point-of-care database systematically derived from and presenting the best available evidence across medicine, is used globally, and contains more than 200,000 citations after twenty years of systematic literature surveillance. In the last few years, the systematic effort to identify, critically appraise, synthesize and report evidence has been expanded to include guidance, and *DynaMed Plus* now provides systematically-derived recommendations for more than 1000 broad topics across medicine. Independent evaluations consistently find this to be the most current clinical reference with the highest-quality evidence summarized using explicit, transparent methods [3–8].

The *DynaMed* mission is so intertwined with integrative medicine and evidence-based medicine that it presents a unique opportunity to view developments in integrative medicine through the lens of those making it interpretable and usable for practicing clinicians. This approach to providing guidance for clinical practice is to convey what we know regarding the desirable and undesirable consequences for different clinical actions and how well we know (or do not know) the likelihood of these consequences. Clinical decision-making is rarely straightforward – it varies with the values and preferences of the clinicians and, most importantly, the patients. So the best evidence and guidance is summarized with attention to context for facilitating shared decision-making rather than as prescriptive (and proscriptive) protocols expected to be the same for all patients.

*DynaMed Plus's* systematically derived recommendations can involve synthesizing inconsistent or uncertain research evidence and guidelines. For example, two large, methodologically sound randomized trials have concluded that acupuncture reduces chronic low back pain compared to no acupuncture or conventional treatment but is no more effective than minimal (sham) acupuncture [9,10]. From this evidence, one might conclude that

acupuncture ‘works’, or that acupuncture ‘does not work’, and professional guidelines have both suggested a role for acupuncture and failed to recommend it [11,12]. *DynaMed Plus* synthesizes the randomized trials and systematic reviews, current guidelines from leading authorities, and clinical expertise and provides a weak recommendation to consider acupuncture as well as various other non-invasive therapies for chronic low back pain [13]. Summaries of the underlying evidence and guidelines are also presented.

In summarizing individual studies, the *DynaMed* methodology is to review the full-text article, extract the information relevant for point-of-care interpretation and application, and present the key findings in objective form. Therefore, the *DynaMed* summary and its conclusion often differ from the original study abstract and conclusion. For example, a 2015 Cochrane review on ‘Massage for low-back pain’ concluded with [14]:

“We have very little confidence that massage is an effective treatment for LBP. Acute, sub-acute and chronic LBP had improvements in pain outcomes with massage only in the short-term follow-up. Functional improvement was observed in participants with sub-acute and chronic LBP when compared with inactive controls, but only for the short-term follow-up. There were only minor adverse effects with massage.”

The *DynaMed* conclusion for the summary of this review was [15]:

**“massage associated with short-term improvements in pain and function in adults with subacute or chronic low back pain (level 2 [mid-level] evidence)”**

This series will identify useful articles about CAM treatments and discuss how they are integrated into clinical practice with attention to evidence-based principles. A *DynaMed* summary of an influential CAM article will be presented, followed by an assessment of the reliability and clinical relevance of the study.

The first *Eujim* column focuses on the first systematic review and meta-analysis of Paleolithic nutrition for chronic disease risk factors (page 167). The Paleo diet was the most searched diet-related term on Google for 2014 [16], but it is not taught in medical schools and is not recommended in dietary guidelines. The evidence suggests it reduces chronic disease risk factors more than diets currently recommended in dietary guidelines, but the clinical focus reminds us that these findings are risk factors, and it will take more time with clinical observations to determine if the benefits for health are realized.

As discussed above, the use of evidence synthesis for developing and guiding clinical practice guidelines depends on

the quality of research, its appraisal and expert opinion which in turn will influence recommendations for improving patient care. For the majority of interventions it is acknowledged that evidence is poor as illustrated at the beginning of this editorial. The limitations of the evidence base to inform integrated conventional traditional Korean medicine guidelines for facial palsy is reported on page 176 with suggestions provided how trial evidence can be improved. The controversy about the compatibility of complementary and alternative medicine (CAM) with bio-medicine (BM) and EBM and the value of p values is also debated in an opinion article by Benbassat (in this issue page 188).

Stroke is one of the leading causes of morbidity and mortality, requiring methods to maximising the utilization of health care resources. A Chinese multi-centre comparative study by Zhao et al. (page 169) investigates how a clinical pathway for stroke which integrated Chinese medicine into the clinical care, reduced length of stay, reduced hospital costs, improved adherence to evidence based medicine and improved clinical outcomes. The occurrence of CVD appears to be associated with low meridian energy according to a comparative study of 2875 adults (page 198). The participants underwent physiological health and meridian energy examinations all on the same day and energy was examined using a meridian energy analysis device. A total of 86 participants had evidence of cardiovascular disease which was found to be negatively associated with overall yin and yang meridian energy. The mechanisms linking CVD and meridian energy require further investigation.

Individuals with metabolic syndrome are at major risk factor for cardiovascular diseases. In Korean medicine, people with certain Sasang constitutional types may be at a higher risk of cardiovascular disease. This premise was investigated by carrying out a pooled analysis of nearly 5000 individuals to assess the relationship between individuals with metabolic syndrome and specific Sasang constitutions. (page 227) An association between metabolic syndrome for 2 typologies (So-yang and Tae-eum) was demonstrated which was independent of obesity. These findings may be helpful to predict metabolic syndrome and contribute to its prevention.

Blood stasis in traditional Chinese medicine (TCM) is recognised as an important underlying pathology which is caused by slowing down of blood flow and is involved in thrombosis, local ischemia as well as other chronic diseases. A systematic review of textbooks and electronic libraries review identified 17 unique definitions of blood stasis with recurring physiopathological concepts which included vascular obstruction, abnormal flow of blood, and blood congestion in a viscus, and contaminated blood (page 158). Although it is a term used in clinical practice for diagnosis and defines treatment principles, there is no general consensus on its definition. This review may provide a valuable reference for future research seeking to standardise the concept of blood stasis and its predictive value.

Flower et al. (page 191) explore the 5 Phase (Wu Xing) model used in Chinese culture to describe cycles of change and development as a means of defining good practice of Chinese Herbal Medicines (CHM). This could be applied to target more efficient clinical research of individual herbs and herbal combinations during clinical research and to explore the knowledge base. The researchers adopt these phases to explore different insights into the practice of CHM in order to develop standardised and individualised treatments for recurrent urinary tract infections which can inform clinical practice and pragmatic studies.

The antioxidant properties of crocin, a natural carotenoid may have potential utility on oxidative stress (associated with metabolic syndrome and cardiovascular disease) as suggested by an RCT of people with metabolic syndrome (page 307). Crocin, a

derivative of saffron was given for 8 weeks at a dose of 15 mg twice a day and significantly reduced serum pro-oxidant levels.

Similarly, a study from Thailand suggests that there are promising results from selected *Clerodendrum* plants, traditionally used for inflammatory related diseases as phytochemical analysis revealed the presence of antioxidant and anti-inflammatory molecules. [page 281] Anti-inflammatory activity of the red alga, *Laurencia* obtuse demonstrated significant inhibition of TNF- $\alpha$  secretion, a significant decrease in paw thickness and decreased gastric damage in a rat model, suggesting its potential for developing potential therapeutic substances with anti-inflammatory, analgesic and gastro-protective activities [page 298].

Lycopene, found in tomatoes and other vegetables or fruits, is a natural antioxidant, believed to alleviate oxidative stress and decrease inflammation. Using data from the Third National Health and Nutrition Examination Survey (USA), the hypothesis was investigated whether lycopene had the potential to reduce the risk of mortality in individuals with rheumatoid arthritis (taking disease activity and prescription medicine use into account) [page 213]. This nationally representative sample indicated that serum lycopene had a significant association with long-term all-cause mortality in individuals with rheumatoid arthritis which should be further investigated. The antioxidant and enzyme inhibitory properties of plants of Turkish origin, *Centranthus longiflorus* subsp. *longiflorus* and *Cerinthus* minor subsp. *auriculata* used as traditional Turkish medicine are investigated in a paper shows promising activity for bio prospecting (page 286).

The potential preventive use of herbal products is also discussed in an article which explored the effects of an essential oil (*Plectranthus amboinicus* Lour) (malvariço), which is known for its antibacterial activity [page 293]. When used in combination with a mouthwash, although the essential oil was effective in inhibiting bacterial growth, the result was less effective than with chlorhexidine alone. This highlights the importance of identifying potential chemical antagonistic effects of natural products when they are used in combination with other preparations. Nano-drugs have recently been used for the management of oral lesions. A randomized clinical trial explores the anti-inflammatory effects 0.1% triamcinolone acetonide in Orabase<sup>®</sup> (an oral pain reliever) with and without nanoliposomal carriers on oral lesions caused by oral lichen planus [page 275]. Triamcinolone acetonide with nanoliposomal carriers in Orabase was more effective in decreasing the intensity of pain and size of lesions after 2 and 4 weeks of treatment.

Knowledge about bioactive compounds and uncontrolled patient consumption of dietary supplements is essential for health care professionals, to ensure their safe use. This is particularly highlighted in a study on a commercially derived dietary supplements given to individuals for 3 months, 5–10 years after their colectomy as well as to healthy volunteers. Findings suggested that the presumed protective effects from flavonoids, anthocyanidins etc. should not be assumed and their consumption should be discussed within the clinical consultation [page 219].

Controlling parasitic diseases is important in farm animals in order to ensure animal productivity but resistance is increasing due to the high use of conventional drugs and different approaches are therefore needed. A flock of native Italian breed of sheep provided with homeopathy were monitored for gastrointestinal parasite burden and their nutritional status assessed through blood testing and faecal count of parasites [page 235]. These preliminary results suggested that the lower number of parasites through the use of homeopathy may mean that chemical treatments could possibly be limited to maintain animal health.

Acupuncture has been shown to significantly decrease activity in the dorsomedial prefrontal cortex. The Editor's choice for this issue is a randomized, waitlist-controlled study, which

demonstrated that acupuncture had positive influences on cognitive function for children with attention deficit hyperactivity disorder (ADHD) who were not on medication. This was confirmed by computerized neurocognitive function tests, although parents ratings of their children did not change (page 150). An experimental study demonstrates promising findings that suggest that acupuncture may provide a significant protective effect against morphine and acetaminophen –induced hepatic damage (page 204). The authors suggest that this may be a result of the amelioration of antioxidant defence systems.

New technologies and potentially innovative interventions are featured in this issue (pages 313 and 317). The first, a clinical trial of women receiving a low calorie diet in combination study using radio-frequency and ultrasound cavitation to reduce female obesity appeared to demonstrated a significant reduction in waist and abdomen circumference (page 313). The second, an observational study focussed on the use of intravenous laser irradiation for amyotrophic lateral sclerosis patients and observed changes in respiratory physiology parameters [page 317]. Given that saturation of peripheral oxygen and pulse were significantly reduced during treatment suggests it may stimulate the sympathetic nervous system and modulate hyperkinetic hemodynamics.

Developing culturally appropriate patient outcome measures is problematic, Frey et al describe and evaluate the psychometric properties of their 'Intercultural Palliative Care Comfort' (IPCCC) scale based on a survey of clinical staff [page 250]. This may be helpful in identifying areas of concern expressed by patients and families from cultures who hold differing views on health and illness.

Fonseca et al's randomised trial comparing Reiki with placebo appeared to be an effective and safe option for improving well-being in patients with blood cancer (page 239). Cancer patients tend to choose CAM during palliative care (page 260). According to a qualitative study on lung cancer patients experience of receiving CAM, patients reported it provided them with the opportunity to concentrate on 'self', regain the will to continue with treatment and improved their quality of life [page 266].

Problems sleeping are common and the Cochrane summary of findings in this issue of *EuJIM* provides some limited evidence indicating that listening to pre recorded music may improve sleep quality (page 165). This fits well with a feasibility, observational study which employed a smart phone music intervention for people with chronic pain conditions reported on page 182 in this issue. Listening to self-selected music for 20 min, significantly reduced pain and anxiety. Responders (defined by a 33% reduction of pain intensity) reported significantly greater satisfaction with the intervention.

We hope that you will enjoy reading the varied content in this issue of *EuJIM*. Please remember to look at the website regarding calls for Special issues and our new Early Researcher Award for Integrative Medicine (ERAIM) award.

## References

- [1] National Center for Complementary and Integrative Health, Complementary, alternative, or integrative health: What's in a name? US Department of Health and Human Services. National Institutes of Health, Bethesda, MD, 2016. (accessed March 21.03.16) <https://nccih.nih.gov/health/integrative-health#integrative>.
- [2] D.L. Sackett, S.E. Straus, W.S. Richardson, W. Rosenberg, R.B. Haynes, Evidence-based Medicine: How to Practice and Teach EBM, 2nd ed., Churchill Livingstone, Edinburgh, 2000, pp. 1.

- [3] R. Banzi, M. Cinquini, A. Liberati, I. Moschetti, V. Pecoraro, L. Tagliabue, et al., Speed of updating online evidence based point of care summaries: prospective cohort analysis, *BMJ* 343 (September) (2011) d5856, doi:<http://dx.doi.org/10.1136/bmj.d5856>.
- [4] S. Shurtz, M.J. Foster, Developing and using a rubric for evaluating evidence-based medicine point-of-care tools, *J. Med. Libr. Assoc.* 99 (July (3)) (2011) 247–254, doi:<http://dx.doi.org/10.3163/1536-5050.99.3.012>.
- [5] R. Jeffery, T. Navarro, C. Lokker, R.B. Haynes, N.L. Wilczynski, G. Farjou, How current are leading evidence-based medical textbooks? An analytic survey of four online textbooks, *J. Med. Internet Res.* 14 (December (6)) (2012) e175, doi: <http://dx.doi.org/10.2196/jmir.2105>.
- [6] J.C. Prorok, E.C. Iserman, N.L. Wilczynski, R.B. Haynes, The quality, breadth, and timeliness of content updating vary substantially for 10 online medical texts: an analytic survey, *J. Clin. Epidemiol.* 65 (December (12)) (2012) 1289–1295, doi:<http://dx.doi.org/10.1016/j.jclinepi.2012.05.003> (Epub 10.09.12).
- [7] K.T. Amber, G. Dhiman, K.W. Goodman, Conflict of interest in online point-of-care clinical support websites, *J. Med. Ethics* 40 (August (8)) (2014) 578–580, doi:<http://dx.doi.org/10.1136/medethics-2013-101625> (Epub 03.02.14).
- [8] J.D. Eldredge, L.J. Hall, K.R. McElfresh, T.D. Warner, T.L. Stromberg, J. Trost, et al., Rural providers' access to online resources: a randomized controlled trial, *J. Med. Libr. Assoc.* 104 (January (1)) (2016) 33–41, doi:<http://dx.doi.org/10.3163/1536-5050.104.1.005>.
- [9] M. Haake, H.H. Müller, C. Schade-Brittinger, H.D. Basler, H. Schäfer, C. Maier, et al., German Acupuncture Trials (GERAC) for chronic low back pain: randomized, multicenter, blinded, parallel-group trial with 3 groups, *Arch. Intern. Med.* 167 (September (17)) (2007) 1892–1898.
- [10] B. Brinkhaus, C.M. Witt, S. Jena, K. Linde, A. Streng, S. Wagenpfeil, et al., Acupuncture in patients with chronic low back pain: a randomized controlled trial, *Arch. Intern. Med.* 166 (February (4)) (2006) 450–457.
- [11] R. Chou, A. Qaseem, V. Snow, D. Casey, J.T. Cross Jr., P. Shekelle, et al., Clinical Efficacy Assessment Subcommittee of the American College of Physicians; American College of Physicians; American Pain Society Low Back Pain Guidelines Panel. Diagnosis and treatment of low back pain: a joint clinical practice guideline from the American college of physicians and the American pain society, *Ann. Intern. Med.* 147 (October (7)) (2007) 478–491.
- [12] O. Airaksinen, J.J. Brox, C. Cedraschi, J. Hildebrandt, J. Klüber-Moffett, F. Kovacs, et al., COST B13 Working group on guidelines for chronic low back pain. chapter 4. european guidelines for the management of chronic nonspecific low back pain, *Eur. Spine J.* 15 (March (Suppl. 2)) (2006) S192–S300.
- [13] *DynaMed Plus* [Internet]. Ipswich (MA): EBSCO Information Services. 1995. Record No. 116935, Chronic low back pain; [updated 2016 Mar 2, cited 2016 March 14]; [about 41 screens]. Available from <http://www.dynamed.com/topics/dmp~AN~T116935/Chronic-low-back-pain>.
- [14] A.D. Furlan, M. Giraldo, A. Baskwill, E. Irvin, M. Imamura, Massage for low-back pain, *Cochrane Database Syst. Rev.* 9 (September (1)) (2015) CD001929, doi: <http://dx.doi.org/10.1002/14651858.cd001929.pub3>.
- [15] *DynaMed Plus* [Internet]. Ipswich (MA): EBSCO Information Services. 1995. Record No. 906118, Chronic low back pain-nonpharmacologic nonsurgical management; [updated 2015 Nov 20, cited 2016 March 14]; [about 32 screens]. Available from <http://www.dynamed.com/topics/dmp~AN~T906118/Chronic-low-back-pain-nonpharmacologic-nonsurgical-management>.
- [16] E.W. Manheimer, E.J. van Zuuren, Z. Fedorowicz, H. Pijl, Paleolithic nutrition for metabolic syndrome: systematic review and meta-analysis, *Am. J. Clin. Nutr.* 102 (October (4)) (2015) 922–932, doi:<http://dx.doi.org/10.3945/ajcn.115.113613> (ePub 12.08.15).

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