



Complementary and Alternative Medicine: The Facts

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Key words: complementary and alternative medicine, evidence-based studies, medical curriculum

IMAJ 2005;7:602–603

The popularity of complementary and alternative medicine in the western world continues to grow [1]. CAM covers a wide scope of topics, including botanical and herbal supplements (such as garlic and ephedra), traditional medicine (acupuncture and ayurvedic medicine), vitamins (e.g., supplementation), and many other undefined modalities such as copper bracelets, magnets, holy water, etc. [2].

For most modalities, not only is the mechanism of action unknown but there is no evidence of benefit. Indeed, although the literature on CAM is expanding, most of the studies are small and of questionable quality. Raschetti et al. [3] analyzed the frequency and typology of scientific papers on CAM published in the period 1997–2002. During this period a total of 20,209 articles on CAM were published, representing 0.7% of the total number of MEDLINE-listed articles. Approximately 50% of CAM articles published in 1996–2002 appeared in journals with no impact factor. The proportion of randomized clinical trials was only 7.6% of the total number of CAM articles. One may argue that the negative attitude toward CAM is related to publication bias since the unfavorable studies are published in the mainstream medical journals whereas the encouraging findings are more likely to be published in CAM journals, which tend to be in languages other than English [4,5]. This argument is not valid since most of the favorable studies did not use adequate placebo or sham procedures, which are particularly important in studies that use subjective measures of outcome such as pain. For example, when an acupuncture program specifically designed to treat fibromyalgia was compared in a recent study to sham acupuncture treatments, it was no better than the sham procedure at relieving pain [6]. Two recent reviews in CAM journals that evaluated the efficacy of Chinese medicinal herbs reached the same conclusion – namely, that herbal preparations could not be recommended because there was insufficient evidence of their effectiveness [7,8]. Moreover, both stated that more high quality randomized controlled trials with similar interventions are required. The U.S. National Institutes of Health established a Center of Alternative Medicine with an annual budget of over 100 million dollars. This center supports

research on CAM, but despite its 7 years of research to date the results are hardly impressive [9].

Some argue that even if CAM is not beneficial, it is at least safe. This premise is not necessarily true because by using alternative medicine one may circumvent conventional therapy that is beneficially proven. Furthermore, although most CAM therapies are presumed to be safe, there is still the possibility of rare but potentially devastating adverse events. Two examples illustrate the possible side effects of CAM. Spinal manipulation by U.S. chiropractors is performed tens of millions of times per year. A handful of reports have described devastating events including death, stroke, and the cauda equina syndrome after treatment with chiropractic spinal manipulation. Similarly, before it was removed from the U.S. market by the U.S. Food and Drug Administration, millions of portions of the herb ephedra were consumed. Several hundred very serious events (including death, heart attack and stroke) that followed the consumption of ephedra were reported [10]. It is unclear whether there is a causal relationship between the use of spinal manipulation or the consumption of ephedra and these rare serious events, but in the light of unproven benefit for any CAM modality, the presence of even a very small increased risk for a serious event is enough to tip the scales against use of the CAM therapy.

Unlike CAM, Conventional Medicine has made enormous progress in the last 30 years, with life expectancy increased by 6 years between 1970 and 2000 [11]. Conventional medicine is based on understanding physiologic and pathologic mechanisms and on therapy whose efficacy has been proven in randomized controlled studies. We can now identify pathogenic genes and target gene therapy. Conventional medicine encompasses a myriad of treatments, enabling us to cure severe infections, open arterial occlusions, transplant organs, cure certain types of malignancies, perform *in vitro* fertilization, prevent and treat cardiovascular diseases, and much much more.

The intriguing question is how CAM continues to flourish when the benefits of conventional medicine are so abundantly clear? Several phenomena can explain this trend. Firstly, as advanced as conventional medicine is, a physician-patient encounter consists mostly of an examination, the prescribing of medications and the referral or carrying out of technical and surgical

CAM = complementary and alternative medicine

procedures. Thus, the doctor does not have the time to listen to the patient and to treat him/her with patience and empathy. Secondly, some medical problems cannot be solved by conventional medicine – either because they are very severe (advanced malignancy, severe heart failure, etc.) or because they involve somatic complaints of underlying psychological problems. Thirdly, some patients have an unjustified fear of medications. Thus, those who are seeking more patience and empathy may benefit from CAM. Those who have multiple complaints without defined organic disease but with psychological problems may also benefit from CAM. However, patients with defined organic diseases such as malignancies, infections or heart disease should be very careful in using *alternative* medicine. They can however use *complementary* medicine if they are aware of its limitations. Patients who are reluctant to take conventional medications with proven benefit because of potential side effects should be very cautious regarding dietary supplements with unknown contents, which may be harmful.

It seems that *complementary* and not *alternative* medicine has a place for a limited number of patients. Consumer pressure and profit-making motives have pushed CAM into public hospitals and health management organizations. Since the trend has indeed become a reality we have to acquaint physicians with its fundamental principles. To ensure the professional control and practice of these modalities, and to increase the cooperation between physicians and CAM practitioners it is necessary to include the basis of CAM in the curriculum of the country's medical schools.

The following two articles represent some of the opinions expressed at the conference "CAM in Medical Education, Ponderings and Possibilities" which took place in December 2003 at the Faculty of Health Sciences, Ben-Gurion University of the Negev. Most of the undersigned authors gave presentations at this conference.

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