Complementary Medicine

Its hidden risks

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Complementary medicine (CM) is popular; 1-year prevalence figures range from 20% in the U.K. to 65% in Germany (1). Increasingly, CM options are being discussed as treatments for diabetes (2,3). The Chair of the U.S. White House Commission on CM predicted that "within 5–10 years CM will be part of the care in every major hospital and clinic across the country" (4), and a U.S. 'think tank' estimated that "by 2010 at least two-thirds (of the US population) will be using one or more of the approaches we now consider complementary or alternative" (5). Such statements implicitly suggest that CM is safe. In fact, a recent report by the U.K. House of Lords' Science and Technology Select Committee stated, "There is no doubt that CM therapies are very safe" (6). But how sure can we be that this is true?

Some forms of CM are clearly not totally devoid of risk: acupuncture, for instance, has caused deaths and other serious complications through infection and trauma; chiropractic treatment has done so through vertebral arterial dissection after upper spinal manipulation; and herbal medicines have caused serious complications through hepato- and nephrotoxicity as well as herb-drug interactions (7). Such events are almost certainly rare, but their exact incidence is unknown at present. Thus, they represent an unknown that needs accounting for when asking the crucial question: Does a given CM treatment do more good than harm?

Other complementary therapies (e.g., acupressure, homeopathy, reflexology, and spiritual healing) might be judged as entirely free of *direct* risks. Yet even these treatments can cause harm. The most obvious *indirect* risk is that complementary therapies are used as true alternatives to conventional treatments for serious medical conditions. Numerous examples of diabetic patients harmed by advice to alter their medication have been published, albeit in the form of anecdotal evidence. We recently encountered a nonmedically qualified CM practitioner who noticed a pigmented lesion on her arm and self-medicated with homeopathic remedies without consulting her doctor, even though the lesion increased in size. When she was finally seen by a physician, an advanced malignant melanoma was diagnosed; tragically, she died shortly afterward. Complementary therapists assure us that such disasters almost never happen, but I find this hard to believe. Despite the fact that underreporting of such cases is probably close to 100% and that very little systematic research exists in this area, similar cases are reported with depressing regularity (8,9).

The theme of CM hindering access to effective treatments is, of course, not confined to cancer or other life-threatening conditions. Surveys from several countries have suggested that a sizeable proportion of nonmedically qualified homeopaths and chiropractors advise their clients against immunization of their children (10). Such advice is potentially harmful not only to the individual in question (11) but, if sufficiently widespread, to entire populations. In the U.K., it represents a leading cause for noncompliance with immunization programs (12). In the U.S., the majority of homeopaths do not recommend immunization, and 9% were shown to openly oppose it (13). Many doctors also worry that CM providers might interfere with their prescriptions, and preliminary evidence from the U.S. suggests that this does indeed happen with some regularity (14).

Further indirect risks of CM relate to the diagnostic methods used by some practitioners. For instance, chiropractors tend to overuse X-ray diagnoses, which might unnecessarily increase the cancer risk as well as costs (15). Other therapists frequently use diagnostic techniques that are demonstrably invalid, e.g., iridology (16), reflexology (17), applied kinesiology (18), and electrodermal testing (19). The obvious danger here lies in false-positive and false-negative diagnoses. In particular, the latter scenario can be associated with missing the time window for a possible cure of a serious condition.

There are even less tangible risks associated with CM use. We recently evaluated the recommendations of some of the (several thousand) lay books on CM and found evidence that diabetic patients could suffer real, possibly life-threatening harm if they adhered to the advice issued in such books (20). In separate analyses, we have demonstrated that seven of the leading books on CM tend to recommend everything for anything, with little consensus among authors and even less grounding in reliable evidence (21). The treatments these books recommended for diabetes are listed in Fig. 1; it is notable that none of these are supported by evidence. Collectively, these seven authors recommend 133 different complementary treatments for cancer. Other studies have shown that breast cancer patients frequenting health food shops are put at serious risk through the advice provided in such premises (22).

A further intangible risk lies with the mindset of the typical CM user. Survey data suggests that individuals would react less cautiously when experiencing a severe adverse effect from a herbal as compared with a conventional over-the-counter medicine (23). Perhaps the least tangible and most important indirect risk associated with CM is an anti-science

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Abbreviations: CM, complementary medicine.

A table elsewhere in this issue shows conventional and Système International (SI) units and conversion factors for many substances.

Complementary therapies recommended for diabetes in seven books on CM

- Acupuncture
- Aromatherapy
- Arthemesia haba-alba
- Atriplex halimus
- Ayurvedic medicine
- Bidens pilosa
- Bilberry
- Biofeedback (2)
- Biolelectromagnetic therapy (2)
- Biotin
- Bitter melon
- Blueberry
- Burdock
- Cayenne (topical)
- Chelation therapy
- Chinese herbs
- Chromium
- Coccinia indica
- Detoxification therapy
- Fenugreek (3)
- Garlic (3)
- Ginkgo biloba (3)
- Ginseng (3)
- Glymnema sylvestre (2)
- Goat's rue
- Guided imagery
- Hawthorne
- Hydrogen peroxide
- Hydrotherapy
- Hypnotherapy
- Juice therapy
- Magnesium
- Massage
- Meditation (2)
- Momordica charantia (2)
- Mulberry leaves
- Olive leaves
- Onion (2)
- Osteopathy
- Ozone therapy
- Pyroxidine
- Qigong (2)
- Reflexology
- Relaxation
- Selenium
- Tecoma stans
- Yoga (3)

Figure 1—*Numbers in parentheses describe the frequency of recommendation; no number means the treatment was only recommended once. Most of these treatments were not recommended as a substitute for antidiabetic drugs but as adjunctive therapies.*

attitude that sometimes emerges from enthusiasts of CM. Not infrequently, this seems to be promoted and sustained by the media. Otherwise respectable British daily newspapers, for instance, tend to report significantly more favorably about matters relating to CM compared with those of conventional medicine (24). Remarkably, the above-mentioned Lords' report on CM recognizes that "the media and other unregulated sources have an undue influence on opinion in the field" (6).

The bottom line of all of this is that even when CM is apparently risk-free, this is not necessarily true. A demonstrably favorable risk-benefit profile is an essential requirement for CM, as it is for any other form of medicine. Without it, issues like regulation of and training in CM degrade to mere window-dressing exercises. Without it, the currently powerful movement of integrating CM into routine health care seems premature and somewhat nonsensical. We owe it to the increasing number of our patients using CM to investigate this area more seriously than we have done in the past—first, do no harm!

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