"Natural is better." That pervasive and pernicious myth, despite being soundly refuted by things like arsenic and hemlock and rattlesnake venom, has become a mainstay in 21st Century conventional wisdom. Who needs Western medicine when the Chinese have been eating and boiling weeds for 3,000 years?

The medical and scientific communities are rightly starting to push back. In a paper published in *EMBO Reports*, authors Arthur Grollman of Stony Brook University and Donald Marcus of Baylor College of Medicine explain the faulty logic of herbal remedies by using *Aristolochia* (a.k.a. birthwort or Dutchman’s pipe) as a case study.

*Aristolochia* has been used, and continues to be used to this day, by cultures all over the planet. Since the time of Aristotle, *Aristolochia* has been prescribed as a cure-all, treating "snakebite, head wounds, insomnia, constipation, uterine problems, and generalized edema," the authors write.

But in the 1990s, scientists were tipped off to a problem when a subset of Danish women, who were taking a mixture of compounds (including *Aristolochia*) for weight loss, developed cancer in their urinary tracts. Moreover, the disease closely resembled one known to occur in the Balkan peninsula, where homemade bread was often contaminated with the seeds of another species of *Aristolochia*. Subsequent investigations led scientists to conclude that, in roughly 5-10% of people with a particular genetic susceptibility, aristolochic acid damages kidneys and/or causes mutations in DNA that lead to cancer.

Aristolochic acid is but one example. Plants produce thousands of potentially toxic compounds, many of which are synthesized with the express purpose of killing other organisms. So, why are the health dangers of herbal "remedies" not more widely known? The authors offer several reasons.
First, it often takes years before a particular environmental exposure produces symptoms. In the case of aristolochic acid, this gap can be as wide as two to three decades.

Second, practitioners of alternative medicine, such as Traditional Chinese Medicine (TCM), don't always adhere to gold-standard medical diagnostics, instead preferring to monitor a patient's qi.

Third, the placebo effect is powerful. People can feel better after taking an herbal supplement simply because they believe they will feel better. In fact, the placebo effect is so powerful that even patients who knowingly take a placebo still feel better [4].

Finally, the general public and even regulatory agencies succumb to the false notion that a particular herbal supplement must be safe because "they've used this for centuries." That's simply not true, as Despair.com [3] reminds us.

The irony in all of this is that the people who turn to "natural medicine" often do so as a way to snub modern Western medicine, which they believe is poorly regulated and purely profit-driven. Of course, the exact same thing can be said of the herbal supplement market, which the authors estimate to be a $30 billion industry.

The authors conclude by arguing for greater regulatory oversight of herbal supplements. But given the fact that alternative medicine has been essentially legitimized as mainstream by agencies such as the National Center for Complementary and Integrative Health, their pleas will likely fall upon deaf ears.


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