A Clinical Trial of Amygdalin (Laetrile) in the Treatment of Human Cancer, by C.G. Moertel, T.R. Fleming, J. Rubin, L.K. Kvols, G. Sarna, R. Koch, V.E. Currie, C.W. Young, S.E. Jones, and J.P. Davignon. *N Engl J Med 306:*201–206, 1982

Amygdalin has had many centuries of use for medical purposes, perhaps first documented by Dioscorides of Anazarbos shortly after the birth of Christ. Usually administered in the form of bitter almonds, it was a common ingredient of herbal prescriptions for a variety of illnesses, and by liberal interpretation of ancient pharmacopoeias one might conclude that it was used for the treatment of cancer. With the advent of the science of medicine, amygdalin, along with most other herbal agents, was abandoned for clinical therapy. In 1952, however, it was revived by Ernest Krebs, Jr., who registered it with the United States Patent Office under the trade name of Laetrile, to be used for the treatment of "disorders from intestinal fermentation" — i.e., cancer. In the ensuing years, Laetrile completely eclipsed any other unorthodox therapy ever used for any disease in our time. It has been legalized by 27 of our 50 states, and it is also legal for use nationwide under a federal court order, which, although it has been reviewed by the United States Supreme Court, has not been reversed. That these phenomena were not just responses to vocal minorities was evidenced by a nationwide Harris poll showing that the American public favored legalization by an amazing 30% margin.

One-hundred-seventy-eight patients with cancer were treated with amygdalin (Laetrile) plus a "metabolic therapy" program consisting of diet, enzymes, and vitamins. The great majority of these patients were in good general condition before treatment. None was totally disabled or in preterminal condition. One-third had not received any previous chemotherapy. The pharmaceutical preparations of amygdalin, the dosage, and the schedule were representative of past and present Laetrile practice. No substantive benefit was observed, in this study. The hazards of amygdalin therapy were evidenced in several patients by symptoms of cyanide toxicity or by blood cyanide levels approaching the lethal range. It appears that amygdalin (Laetrile) is a toxic drug that is not effective as a cancer treatment. (Abstract by C. Hoyt)

Comment

This study was organized to determine whether this drug plus metabolic therapy consisting of diet, enzymes and vitamins would be effective in the treatment of advanced cancer. 178 cancer patients were selected. The criteria for selection included having a histologically proven cancer in which there was no curative standard therapy; having been off conventional treatment for at least one month; being in reasonably good general health; and having a tumor which could be objectively evaluated for regression.

The choice of dose route and therapy schedule was based upon current practice by practioners using this agent. 165 patients received a standard dose of Laetrile while 14 received a very high dosage. Therapy was continued until there was definite evidence of progression or severe clinical deterioration.

Only 1 of 175 patients treated had a partial response on a combination of Laetrile and metabolic therapy. 152 of 178 patients have died with a median survival of 4.8 months. The authors concluded that the treatment did not appear to affect survival.

There was significant toxicity associated with the use of this drug. In some patients, an almost lethal level of cyanide was observed. Other toxicity included nausea, vomiting, headaches, dizziness, mental obtundation, and dermatitis. In studying the toxicity of the drug, these investigators pointed out that much of the Laetrile available and used by practitioners has a significant degree of microbial and endotoxic contamination.

These authors have established in this study that Laetrile appears to have no value in the treatment of advanced cancer.

DEVRON CHAR

Tumor Regression of Human Retinoblastoma in the Nude Mouse Following Photoradiation Therapy, by W.F. Benedict, R.W. Lingua, D.R. Doiron, J.A. Dawson, and A.L. Murphree. *Med Pediatr Oncol 8:*397–401, 1980

Photoradiation therapy (the combination of hematoporphyrin derivative and red light) is effective in selectively destroying various solid tumors in both animals and humans. The success of this procedure is due to the preferential accumulation of hematoporphyrin derivative (HPD) in malignant tissue compared to adjacent normal tissue and the generation of cytotoxic singlet oxygen by HPD when illuminated by tissue penetrating red light. Selective tumor localization of HPD and photodynamically induced toxicity cause local