Testimony

by

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with regard to

LAETRILE
(Docket No. 77N-00481)

Hearing Clerk
Food and Drug Administration
Room 4-65
5600 Fishers Lane
Rockville, Maryland, 20857

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The American Cancer Society views Laetrile as having no proven value in the treatment of human cancers. The Society has made a continuing review of all the literature and other information available and finds no evidence that treatment with Laetrile results in objective benefits to patients with cancer. Since 1956 the National Cancer Institute, in conjunction with the cancer research centers of America, has reviewed over 300,000 drugs, chemicals, antibiotics, and other agents including Laetrile to evaluate them in regards to their usefulness in cancer treatment. From this research more than 40 specific agents have been found to have effect against cancer in animal and in man. Although several trials have been made with Laetrile, it has never been proved effective against cancer in any way whatsoever.

Laetrile has been claimed to be palliative, useful in pain relief, or curative for nearly 25 years. This is adequate time for a drug to establish itself if it has any value. To date this has not been the case.

Fifteen years ago the proponents of Laetrile pleaded guilty to violation of the Food, Drug and Cosmetic Act.[1/] Fourteen years ago the Food & Drug Administration found "no competent, scientific evidence that Laetrile is effective for the treatment of cancer." Twelve years ago the Laetrile proponents agreed to a permanent court injunction against further distribution of the drug.[2/] Eleven and a half years ago the proponents pleaded guilty to violations of the injunction.[3/]

In 1970 FDA awarded an Investigational New Drug Exemption (No. 6734) to investigators of Laetrile, but a month later, in the course of routine review of the exemption application, found serious problems with the application's clinical data. FDA then requested the proponents of Laetrile to provide data missing on two questions about manufacturing controls, seven questions on preclinical tests, and four medical questions on data the application had mentioned but not submitted. The usual ten days were given for a reply. None appeared. The exemption was terminated. More than four months later, additional data were forthcoming.[4/] Expressions of interest from one or more congressmen to the Department of Health, Education & Welfare were followed up by the Food and Drug Administration's appointment of a special committee of nongovernment experts to review the entire Laetrile data file.[5/] The committee found that independent laboratory assays provided no in vitro or in vivo evidence in animal models to warrant trial of the substance in humans. A critic of the FDA's determinations, Dean Burk, at that time of the National Cancer Institute staff, and Andrew L. McNaughton, a party in the seeking of the exemption, had the opportunity to participate in the committee's assessment. The scientific rationale is that amygdalin, the important component of Laetrile, split by the enzyme beta-glucosidase, releases glucose, benzaldehyde (a mild anesthetic) and cyanide, which is lethal to cells. Supposedly, cancer cells contain more enzymes than normal cells and thus receive a larger amount of cyanide. Normal cells are said to contain another enzyme, rhodanese, that detoxifies cyanide and therefore prevents unwanted destruction. However, there are many flaws in this hypothesis.

Studies have shown only traces of beta-glucosidase in animal tissues, and even less in experimental tumors. Furthermore, there is no pronounced difference in the level of rhodanese between normal and cancerous tissue. Amygdalin (Laetrile) administered parenterally is probably excreted almost intact in the urine. Taken orally, it is decomposed in the intestinal tract by beta-glucosidase into highly lethal hydrogen cyanide. Laetrile is 40 times more toxic when taken orally than parenterally.

From 1973 to 1975 Sloan-Kettering Institute conducted five separate experimental studies in an attempt to verify some initial responses with amygdalin in one strain of mice that developed spontaneous mammary cancer. These same studies were also conducted in two separate experiments at Catholic Medical Center with negative results. The National Cancer Institute has found no evidence of antitumor activity using amygdalin in leukemia and melanoma animal screens. Under contract further studies were conducted by the Southern Research Institute and Arthur D. Little Inc. in osteogenic sarcoma and lung carcinoma. Arthur D. Little Inc. performed experiments in leukemia, melanoma, and carcinosarcoma screens and repeated experiments in leukemia. None found positive results with amygdalin alone or with amygdalin in combination with beta-glucosidase.

There is no scientific evidence to justify clinical trials of amygdalin.

It is true that the highly predictable course of disease development in many types of cancer can be rationally invoked to justify therapeutic trials, which might not be permissible in other less relentless diseases.

Three reasons might be advanced for bringing Laetrile under that sort of rationale:

1. Such trials might be justified where there is any scientific evidence at all that some patient might benefit. There is none in the case of Laetrile.

2. They might be justified where scientific evidence, for instance animal studies, althou h incomplete has begun to produce some positive results. This is not the case in Laetrile.

3. If Laetrile were only a placebo which medical experts find ineffective, but which patients pushed to anguished extremes might find psychologically helpful, one could understand proposing its use. But there is no effective statutory way to approve the drug for use in patients whose only benefit will be a placebo benefit as differentiated from those who can possibly benefit from standard treatment. Further, the only way to achieve the placebo effect, itself, is for some authority to indicate that the drug could be effective. There is no official, no ethical way to do that.

Proponents of Laetrile do not ask for placebo use of the substance. They hold it forth as a cure, a palliative, a relief of pain, and this can lead to death of persons who, taking standard remedies, might live. Recently, eleven types of generalized cancer have been controlled and in some instances have been cured by chemotherapy. These account for 15% of the cases of cancer in this country.[6/] Over one-half of the localized cancers are curable by conventional means (surgery and radiotherapy).

Laetrile proponents have used the less stringent drug laws of Mexico to sell and administer the drug there. They have beamed radio

messages across the border to the United States promising effective care in Mexico. Desperate patients have made these trips, some experiencing the psychological relief that often accompanies placebo use and returning "cured." But the financial expenditure incurred does not seem justified by the results obtained.

FDA has taken information from Mexico on alleged cancer cures among patients administered Laetrile and traveled to several nations to document the cures. Their review has not substantiated the efficacy of the drug.

Availability of a placebo is one thing. Charging high prices for the placebo amounts to financial manipulation.

The American Cancer Society opposes legislation to legalize the interstate distribution or sale of Laetrile on the grounds that some patients might take it in preference to standard proven treatment which might have benefited and even cured them.

Footnotes

1. May 3, 1962, John Beard Memorial Foundation and Ernst Krebs, Jr. Reported in Notice of Judgment No. 7062 (August 8, 1973), Vi-Cardia capsule and Pangamic Acid capsule.

2. Ernst Krebs, Sr., consented to entry of restraining order prohibiting him from shipping Laetrile and similar substances. Northern District Calif. Civil Case No. 43588 (May 3, 1965).

3. Ernst Krebs, Sr., pleaded nolo contendere on 8 counts of violating that injunction. Consented to entry of pending injunction. U.S. District Court of Northern California Criminal No. 40409 (August 2, 1965).

4. Letter from HEW Secretary Elliot Richardson to Representative L. H. Fountain, 28 August 1971.

5. Albert Segaloff, M.D., Oschner Foundation, New Orleans; Melvin J. Krant, M.D., Tufts; David P. Rall, M.D., PhD, National Institute of Environmental Health Sciences; Michael B. Shimkin, M.D., University of California--San Diego; Julian L. Ambrus, M.D., Roswell Park Memorial Institute.

6. The Cancer Bulletin, Volume 25, No. 4, July/August 1973, Houston, Texas.