

# *Manufacture and Regulation of Laetrile*

By Tom Beauchamp

It has been estimated that consumers waste \$500 million a year on medical quackery and another \$500 million annually on some "health foods" which have no beneficial effect. Unnecessary deaths, injuries and financial loss can be expected to continue until the law requires adequate testing for safety and efficacy of products and devices before they are made available to consumers. (President John F. Kennedy in a message to Congress)

Let me choose the way I want to die. It is not your prerogative to tell me how. (Glenn Rutherford, cancer patient and Laetrile supporter at FDA hearing)

These quotations express the essence of an acrimonious conflict that raged over the better part of the 1970s in the scientific and popular press, in courtrooms and hearing rooms, in prestigious research institutions, and among drug manufacturers. This debate emerged over the regulation, manufacturing, and marketing of Laetrile, a drug said to be a cure for cancer by its supporters but denounced as worthless by much of the scientific community.

The U.S. Food and Drug Administration (FDA) has a responsibility to determine both the *safety* and the *efficacy* of a drug before allowing it to be marketed in the United States. The FDA's responsibility for drug licensing dates from the passage of the 1906 Pure Food and Drug Act, which primarily addressed safety abuses among patent medicine purveyors. In 1962 new laws were passed (partly in response to the Thalidomide tragedy involving malformed fetuses) that required the FDA to assess a drug's efficacy as well as its safety before the drug could be approved for marketing.

The FDA examined Laetrile for safety and found no significant problems. However, the FDA could not find evidence of the drug's effectiveness and became convinced that Laetrile was worthless for the treatment of cancer. Consequently the drug was banned from the U.S. market.

Laetrile supporters reacted with fury to the drug ban. Cancer victims demanded the right to use it. Over 20 state legislatures that opposed the FDA's decision legalized it for intrastate marketing and consumption. Others felt the FDA was denying the American people their Constitutional right to freedom of choice. Many argued that since the drug had not been proven unsafe, people should be allowed to use it pending further tests. But many in the medical and scientific communities opposed this laissez-faire attitude. They argued that patients were drawn toward an inexpensive, painless cure

for their disease but failed to realize its ineffectiveness. Critics claimed that numerous deaths had resulted from Laetrile use and that some of these people could have been helped by legitimate alternative forms of treatment.

The debate's ferocity was new, but Laetrile was not. According to Dr. Charles Moertel of the Mayo Clinic, "Amygdalin had many centuries of use for medical purposes. 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 pharmacopeias one might conclude that it was used for the treatment of cancer." German physicians briefly used amygdalin in cancer treatment in 1892, but they discarded the extract as ineffective and toxic.

Modern proponents of Laetrile therapy attribute the beginning of the Laetrile movement to Ernst Krebs, who began experimenting with the extract of apricot pits in the 1920s, and to his son, Ernst Krebs, Jr., who refined the extract to produce Laetrile in 1949 for use in the treatment of disorders of intestinal fermentation cancer. Since then pro-Laetrile researchers have experimented with a variety of methods and techniques for using Laetrile in cancer treatment, and they claim that Laetrile is in fact effective. According to Krebs, Laetrile is effective because cyanide, which is an active ingredient, attacks the cancerous cells while an enzyme called rhodanese protects the normal cells.

Initially Krebs's supporters claimed that Laetrile not only cured or controlled existing cancers but could also prevent cancers from forming. They based their claims of Laetrile's efficacy primarily on patients' case histories (some published in a volume called *Laetrile Case Histories*) and on personal testimonials of "cured" cancer patients. However, many in the medical and scientific communities were not impressed with this form of proof. They considered the reported case histories too sketchy and the follow-up times too short to support the claims. Moreover, few patients took Laetrile without first undergoing more traditional forms of cancer therapy. Under these conditions it is virtually impossible to determine which treatment or treatments should receive credit for improvements. Also, the natural history of cancer is not totally understood, and spontaneous remissions can and do occur.

In 1962 the FDA charged Krebs with violating the Federal Food, Drug and Cosmetic Act, on grounds that he could not prove his drug's effectiveness. In 1963 Laetrile was banned because it was not found to be an effective treatment of cancer or any other health problem. Since then, Laetrile proponents have revised their claims. They no longer proclaim Laetrile an independent cure for cancer instead emphasizing its role in the prevention and control of the disease. Laetrile supporters also maintain that the

standards of proof for Laetrile research have been higher than for other cancer drugs and that pro-Laetrile results have been obtained but suppressed.

The controversy surrounding Laetrile turned largely on the drug's efficacy and on one's right to *manufacture, market, and purchase* the product. During the 1970s the FDA suffered criticisms that it was a paternalistic agency after it attempted to ban the manufacturing and marketing of the popular artificial sweetener saccharin. The Laetrile problem immediately followed this unpopular FDA policy. By mid-1977 FDA head Donald Kennedy said his agency found increasing evidence of Laetrile's inefficacy. However, criticism of the FDA was also increasing and efforts were mounted either to allow free choice of the drug or to test for efficacy in a public trial using human subjects. Some state legislatures and judges called the FDA's findings into question. Some states had legalized its manufacture and sale, and some courts had criticized the FDA record and policies. Even prestigious physicians and newspapers such as *The New York Times* endorsed the right of individuals to choose to use a possibly inefficacious drug.

Responding to the demands for a Laetrile efficacy trial with human subjects the National Cancer Institute sponsored a 1981 clinical trial with 178 terminal cancer patients. The trial results dispelled any lingering doubts in the medical and scientific communities over Laetrile's alleged ability to destroy cancer cells. Of the 178 trial subjects, only one demonstrated a partial positive response to Laetrile treatment. His gastric carcinoma showed a 10-week retardation period. However the cancer progressed, and the patient died 37 weeks after Laetrile therapy. In their conclusion, the trial doctors commented, "No substantive benefit was observed in the terms of cure, improvement or stabilization of cancer." According to the study, several patients displayed symptoms of cyanide toxicity and blood cyanide levels approaching the lethal range. The report concluded "Amygdalin (Laetrile) is a toxic drug that is not effective as a cancer treatment." In response, Laetrile manufacturers sued the NCI in three lawsuits, claiming the study had drastically reduced demand for Laetrile, thereby inflicting financial damage on the manufacturers. All three suits were dismissed in the courts.

According to proregulation partisans, it is desirable and necessary to protect uneducated risk takers who are vulnerable to unsubstantiated medicinal claims: "The absolute freedom to choose an effective drug is properly surrendered in exchange for the freedom from danger to each person's health and well-being from the sale and use of worthless drugs." From this perspective, regulation is not irreconcilable with freedom of choice. If a regulation promotes situations under which more informed and deliberative choices are made, it does not constrict freedom; and a choice cannot be free if the product is a fraud.

By contrast, freedom-of-choice advocates claim that the simple restriction of Laetrile violates the individual's right to autonomous choice and the manufacturers' rights to market a product. Supporters of this view resent the characterization of cancer patients as people who are incapable of making rational or free decisions because of the stress of illness. They believe that most of these individuals are able to make well-founded personal decisions and should be allowed to do so.

The economic implications of banning Laetrile have also introduced a significant controversy. Each side has accused the other of economic exploitation of cancer victims. Laetrile proponents say that traditional cancer treatments represent an enormous and profitable industry and claim that a cost savings for patients would be achieved if Laetrile were legally marketed in the United States. They note that the American Cancer Society estimated that as early as 1972 the direct costs of cancer treatment totaled over \$3 billion (for hospital care nursing home care, physicians' and nurses' fees, drugs and other treatments, and research). By comparison, Laetrile supporters claim that legalized Laetrile would cost a fraction of conventional cancer therapies.

Laetrile has been primarily manufactured and marketed in Mexico. In one study it was estimated that in 1977 alone, approximately 7,000 patients were treated in two Mexican clinics at an average cost of \$350 per day. The United States represents a large potential market for a legalized, over-the-counter Laetrile. However, due to FDA restrictions, one may neither import amygdalin from foreign countries nor ship it across state lines. Although the FDA does not control *intrastate* commerce, it would not be profitable for any one state to manufacture Laetrile in all its stages—that is, from the farming of apricot trees to the laboratory synthesis of the finished drug. Furthermore, the FDA has issued an import alert ban on amygdalin and all corresponding brand names, including Laetrile and vitamin B-17. The FDA refuses to permit importation of Laetrile on the grounds that "it appears to be a new drug without an effective new drug application (NDA)." The FDA also classifies the Laetrile issue as a health fraud case. As a senior scientist at the AMA commented, "People took Laetrile, ignored other, more conventional cancer treatment, and died." Although NDAs for Laetrile have been submitted to the FDA, none has been approved. Consequently, the FDA currently proscribes all importation and interstate transportation and marketing of amygdalin under any brand name.

However, one may still obtain amygdalin quickly and easily within the United States. VitaChem International/Genesis West in Redwood City, California, offers 50 tablets of "Laevalin, a naturally occurring amygdalin" for \$47.50. Mexican-based Vita Inc. will ship 100 Laetrile tablets to a United States address for \$65.00. To circumvent FDA regulations, U.S. Laetrile

marketers have changed the brand name but continue to market amygdalin openly, in violation of the FDA import and interstate commerce ban.

The courts as well as the press have provided the arena for the conflict over the rights of a patient to choose a treatment and the rights of manufacturers to market a product. Although it was not the intent of Congress to impose such restrictions on choice, the patient's choice is in fact restricted by the 1962 drug amendments. Because these amendments restrict the market to industry-tested and FDA-approved products, treatment by and manufacturing of alternatives are inevitably constricted.

A series of lawsuits have challenged the FDA restrictions, and a number of states have passed laws legalizing its use. In early 1977 U.S. District Court Judge Luther Bohanon (U.S. District Court for the Western District of Oklahoma) issued a ruling permitting Laetrile's importation under a physician's affidavit for terminally ill cancer patients. Although overturned by an appeals court in December 1986, Bohanon's ruling allowed Laetrile treatment for terminal patients. Despite the opportunity to convince the FDA of the drug's efficacy, Laetrile proponents did not obtain an NDA approval for amygdalin. The judicial and legislative challenges are not, however, without opponents. Lawyer William Curran, for instance, has deplored the action of certain courts in allowing the use of Laetrile for the terminally ill:

It is understandable that judges have had trouble dealing objectively with the legal pleas of plaintiffs who are dying a painful death and whose only wish is to indulge in a harmless, although ineffective, gesture of hope. The courts have tried to dispense mercy. Their error has been in abandoning the protection of law for these patients.

As the arguments have developed, the issues of choice and fraudulent representation by business have moved to the forefront. Franz Ingelfinger, the distinguished former editor of the *New England Journal of Medicine* and himself a cancer victim, was convinced that Laetrile was useless. In 1977 he wrote, "I would not take Laetrile myself under any circumstances. If any member of my family had cancer, I would counsel them against it. If I were still in practice, I would not recommend it to my patients." On the other hand, he said, "Perhaps there are some situations in which rational medical science should yield and make some concessions. If any patient had what I thought was hopelessly advanced cancer, and if he asked for Laetrile, I should like to be able to give the substance to him to assuage his mental anguish, just as I would give him morphine to relieve his physical suffering." Ingelfinger did not view truthful marketing of the drug as involving a fraudulent misrepresentation.

In January 1987 a Laetrile bill was introduced into the U.S. House of Representatives. H.R. 651 provided that the controversial efficacy

requirements of the Food, Drug, and Cosmetics Act would not be applied to Laetrile if a patient were under a physician's care (see Exhibit 1). The bill's sponsor, Rep. Bill Goodling (R-PA) asserted that "the legislation does not state that Laetrile is a cure for pain or a pain reducer." The bill died in the Health and Environment Subcommittee of the House Energy and Commerce Committee.

The National Institutes of Health and most other health care institutions still discourage the use of Laetrile, preferring conventional methods of cancer treatment. The National Cancer Institute's official policy is to encourage conventional methods with the explanation that testing has always shown "evidence of Laetrile's failure as a cancer treatment." The American Cancer Society holds the position that "Laetrile is not effective in the prevention or treatment of cancer in human beings." Despite the medical evidence and the FDA's past efforts to restrict the drug's marketing, one may still today purchase amygdalin by dialing a toll-free number.

#### **Exhibit 1**

H.R. 651: To provide that the effectiveness requirements of the Federal Food, Drug, and Cosmetic Act shall not apply to Laetrile in certain cases, be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in the administration of section 505 of the Federal Food, Drug, and Cosmetic Act, the effectiveness requirement of such section shall not be applicable to Laetrile when used under the direction of a physician for the treatment of pain.

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