The nutritionally and metabolically destructive "nutritional and metabolic antineoplastic diet" of laetrile proponents

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In the quackery-promoting (1) book, Laetrile Case Histories, (2) the authors delineate the "nutritional and metabolic antineoplastic diet" they recommend as laetrile proponents. As a physician-nutritionist-attorney involved in preparing plaintiff's case in Scott v. McDonald, (3) I analyzed that diet and found as follows (as did also Professor Thomas Jukes of the University of California at Berkeley, who so testified). (4) The diet calls for:

1) No meat, fish, or fowl: these are the major sources of absorbable iron in the American diet (3), and their lack results in a much higher frequency of iron deficiency and iron deficiency anemia (4), thereby weakening rather than helping patients with cancer.

2) No dairy products: these are the main sources of calcium in the American diet (5). Lack of adequate calcium damages bone maintenance (6) thereby weakening rather than helping patients with cancer.

3) No animal protein: animal protein is the entire source of vitamin B₁₂ in the American diet (7), except for vitamin B₁₂-fortified foods and microorganisms such as in seaweed. Lack of this vitamin interferes with basic biochemical processes in normal tissue (8), thereby weakening rather than helping patients with cancer.

4) Increased ingestion of fruits and vegetables: such a diet is high in bulk and low in calories (9), just opposite to the needs of cancer patients (10). In addition, it is low in needed animal protein (11), thereby weakening rather than helping patients with cancer. Furthermore, many nuts (almonds, etc.), stone fruit kernels, apple seeds, fruits (peaches, plums, etc.) and vegetables (green peppers, mushrooms, lettuce, carrots, celery, bean sprouts, etc.), contain varying quantities of the enzyme β-glucosidase (E. Conn, personal communication; (12-14)) which releases cyanide from laetrile (15), thereby weakening rather than helping patients with cancer; making almost certain that cancer patients swallowing the worthless (16) cancer remedy, laetrile, will get some chronic cyanide poisoning. Contrary to popular belief that cyanide either kills or does nothing, low doses of cyanide produce headache, dizziness, fever, malaise, nausea, vomiting, diarrhea, abdominal tenderness and cramps, rash, hepatomegaly, splenomegaly, and lymphadenopathy and slowly progressive fatigue, neuromuscular weakness of arms and legs (17), gradually progressive loss of vision and hearing, and other deteriorative nerve damage (18).

Although the authors of "Laetrile Case Histories" (2) do not inform their readers that laetrile can be lethal when eaten with vegetarian foods, they appear aware that the β-
glucosidase in apricot kernels can release a poisonous amount of cyanide from laetrile. Their apparent awareness is expressed on page 113 of the book, where they state, using italics for emphasis, “The kernels must be taken at a different time during the day than the Laetrile tablets.” They neither inform their readers why they make this recommendation, nor do they inform them that not only apricot kernels but also many other vegetarian foods eaten together with a gram of laetrile will generally poison and occasionally kill the patient. A gram of laetrile contains 60 mg of cyanide, which can be a lethal dose (16). Luckily, as part of the laetrile rip-off, tablets usually contain only 0 to 88% of the laetrile dose stated on the label (16). Like narcotics pushers, laetrile pushers generally sell an adulterated product to make the traffic even more lucrative.

5) Megadoses of vitamin C (ascorbic acid): it was admitted by defense witness Bruce Halstead in Scott v. McDonald that megadoses of vitamin C may release some cyanide from laetrile, and that was in fact demonstrated in the laboratory (V. Herbert and R. C. Backer, unpublished data). Thus, to give megadoses of vitamin C with laetrile is to increase the probability that the patient will suffer from chronic cyanide poisoning complicated by the acute bouts of hypotension, nausea, vomiting, and diarrhea associated with laetrile administration (16). Hypotension from cyanide poisoning is well established (16, 19). Other possible undesirable effects of megadoses of vitamin C have been delineated elsewhere (20).

6) Megadoses of vitamin E: the possible undesirable side effects of megadoses of vitamin E have been delineated elsewhere (21).

7) Oral pancreatic enzymes: these have no value except in pancreatic disease as a replacement for missing pancreatic secretion into the intestine (22, 23). Since they are proteins, they are not absorbed from the intestine, and are destroyed therein. Giving them constitutes not only a waste of money but also a possible source of undesirable side effects for cancer patients. Giving them by enema is bizarre and can aggravate any surface-damaging lesion in the colon. Injecting them is not only worthless, but can produce fatal anaphylactic shock.

8) Pangamic acid (“vitamin B15”): this is a worthless and possibly harmful drug of variable chemical composition whose proponents have trade-named it a vitamin (24). To call something a vitamin does not make it one. A vitamin must meet the dictionary definition of the word, which requires among basic essential features that lack of the substance produces a specific deficiency disease syndrome (i.e., lack of vitamin C produces scurvy), and supplying the substance corrects that deficiency syndrome.

9) Laetrile (amygdalin; “vitamin B17”): This substance, listed under its correct name, amygdalin, in the Merck Index (25) is a cyanogenetic glycoside with no known value in human nutrition (16, 26). It has been proposed as a cancer remedy ever since 1845 but has never been found to be of value against cancer (25), and often has produced acute and chronic cyanide poisoning (16, 26). In the time of the pharaohs, it was used in the form of extract of peach kernels for performing executions (16). Its proponents have trade-named it “vitamin B17,” but it is not a vitamin (16, 26). It is two parts sugar, one part benzaldehyde, one part cyanide, and no parts vitamin (25). Patients taking laetrile often suffer chronic and acute cyanide poisoning (see 4 above) (16).

Laetrile proponents confuse the public by claiming Laetrile, with an upper case L, is different from amygdalin, and this is true, but irrelevant. Laetrile (25) is the product whose never-reproduced synthesis was patented by E. Krebs, Jr., which has never been marketed, and which has been successfully synthesized via another route by an FDA-Johns Hopkins team in 1977 (27). It differs in content from amygdalin in that it is one part sugar, one part benzaldehyde, and one part cyanide. Laetrile, with a lower case l, is a synonym for amygdalin (16, 25) and is the substance sold by laetrile proponents. Five lines of evidence suggest laetriles may cause cancer (16).

The nutritional and metabolic program of laetrile proponents is perhaps as unhealthy a diet from the nutrition and metabolism standpoint as that from the nutritional and metabolic standpoint of most cancer patients. It is no accident that the nutritional and metabolic programs are identical. 

point as it is possible for the mind of man to conceive. The promoters of laetrile have stripped the words “nutritional,” “metabolic,” and “holistic” of their dictionary meanings and use them in code phrases that describe health quackery. To quote the Wall Street Journal cartoon caption reproduced on page 2 of the December 1976 issue of “The Choice,” a magazine that promotes the lucrative health quackery industry: “Orthodox medicine has no known cure for your condition. I could recommend a good quack.”

Persons who use the “laetrile metabolic program” violate the first rule of medicine, “above all, do no harm.” (28) Additionally, in appropriate circumstances, they may run the risk of being convicted of homicide (29).

Addendum

Two reviews of the dangers of laetrile recently appeared (30, 31). A letter summarizing the main points of the current paper was recently published (32), as was evidence that an ingredient of some formulations of laetrile is mutagenic (33). Proof of acute and chronic cyanide poisoning from laetrile and the “laetrile diet” is obtainable not only clinically but also in the laboratory, by measuring blood (red cell) cyanide and 24-hr urine thiocyanate (16, 18, 30, 31).

References

Elucidation of fructose metabolism in liver and fructose action in brain demonstrate three parallelisms with ethanol. First, hepatic fructose metabolism is similar to ethanol, as they both serve as substrates for de novo lipogenesis, and in the process both promote hepatic insulin resistance, dyslipidemia, and hepatic steatosis. Second, fructosylation of proteins with resultant superoxide formation can result in hepatic inflammation similar to acetaldehyde, an intermediary metabolite of ethanol. Lastly, by stimulating the "hedonic pathway" of the brain both directly and indirectly, f