

TREATMENT OF CANCER
WITH
LAETRILE (VITAMIN B17)

Excellent
A+

A report submitted to the
Pharmacology Department of
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Introduction

The incidence of cancer, as well as the mortality rate from cancer, has been steadily increasing over the past few decades¹. Many reasons can be cited² for this rise, such as: a) an increasing amount of carcinogens in our atmosphere and foodstuffs, b) the increasing life span which affords greater opportunity in the older age groups for developing cancer, c) the medical professions mastery over many diseases has allowed cancer to take a more prominent position in mortality in all age groups. That these arguments have some validity is not questioned. However, one factor concerning man's total environment has been generally overlooked in the attempt to explain the ascendancy of this disease. Due to development of specialized methods of growing and processing foods, the diet of industrially advanced peoples has been drastically altered during the same span of time in which cancer's incidence has been increasing.

The thesis of this report is that cancer, like pellagra and scurvy (which in their own eras were considered to be of mysterious etiology, possibly of microbial origin) is due to a deficiency of a specific factor or factors in modern man's diet.

Cancer a deficiency disease?

All diseases in the past were as mysterious as cancer is to us. In the centuries prior to the work of Pasteur, Koch, Jenner and other great microbiologists and physicians, the etiologies of nearly all diseases were unknown. With the era of the microscope and the discovery of the relationship between microbial organisms and disease, it became possible to define more precisely the cause of many diseases. It is not good, however, to be too precise in defining the etiology of a disease. One must be careful to include in basic terms all of the factors in the etiology.

For example, the cause of tuberculosis is obviously the tubercle bacillus, right? Wrong! If that were the whole story, then nearly all of us would have had the disease in our lifetimes, for nearly all have harbored this organism within our bodies at one time or another. What makes one person acquire clinical disease and another person show no signs of the parasite within him? The complexity of this question precludes the possibility of focusing the blame for the disease upon a single causative factor. As important as the tubercle bacillus is to the etiology of tuberculosis, it is not more important than the factor of predisposition to the infection. Neither the microbe by itself, nor the debilitating factors by themselves can cause the disease tuberculosis. However, and this is even more important, the elimination of either the microbe or the condition of predisposition can prevent the occurrence of the disease. And, before the disease has gone too far, elimination of either can be curative.

Tuberculosis was used merely as an illustrative example of a truth nearly universal in the field of medicine, that is diseases are the result of a number of contributing factors, not a single factor. The same is true of cancer. There is more than one factor involved, were it not so, all chimney sweeps would get cancer of the scrotum, all smokers would get lung cancer, all people exposed to the sun would contract skin cancer and all radiologists, leukemia. Determining all of the interlocking factors behind the development of cancer has been a difficult scientific problem and has been the cause of controversy for many years. The role that nutrition plays in cancer's etiology is an obvious one, if only for the fact that many dietary constituents (benzopyrene, aflatoxin, nitrites, etc.) have been proven to be carcinogenic. However, the possibility of dietary deficiency being a factor in causing cancer has not been so well investigated on a massive scientific scale.

The evidence in favor of this possibility will in part be cited.

The first argument to be discussed in relation to the interlock between cancer and nutrition is a bit of inductive reasoning. Such reasoning is used by the physician almost routinely when a definitive diagnosis is impossible, but treatment must of necessity proceed on the basis of a decision. Here the physician decides to go with the odds. Considering the list of diseases which could conceivably cause the signs and symptoms observed, he chooses that diagnosis which other physicians in the area or he himself has encountered recently. The odds are that he will be right in making this diagnosis.

In the question we are now considering, that of the causative relation of faulty nutrition to cancer, there are only two possibilities. Either faulty nutrition predisposes to cancer or it doesn't. We have no definite proof either way, so like the physician above, we go with the odds. We choose to think that faulty nutrition predisposes to cancer, because in all of our experience, we have found that faulty nutrition can be a contributing factor to almost all diseases.

Cancer is a chronic disease. The above generalization about the relationship between poor nutrition and disease is even more emphatically the rule if only chronic diseases are considered. Hence, if we were to "go with the odds" we would not make cancer one of the few, if not the only exception to this rule.

The scientific method provides certain prescribed steps to take in the testing of any hypothesis. One would like to be able to design an experiment with adequate controls in which one variable at a time could be isolated and tested. Such an experiment has been carried out in relation to our hypothesis.

In 1927, Sir Robert McCarrison, M.D., Director of Nutrition Research in India initiated a research on the relationship between diet and disease. The animals chosen by McCarrison were 3,432 albino rats. All the rats were

given identical environmental conditions with scrupulous care taken that nothing varied in these rats total environment except their diet. The rats were divided into groups and each group was fed a specific diet for 27 months (a time corresponding to the age of 55 years in man). After 27 months one of the groups of rats had been especially worthy of notice. There were 1,189 rats in this group. McCarrison reported as follows:

"During the past two and a quarter years there has been no case of illness in this 'universe' of albino rats, no death from natural causes in the adult stock, and, but for a few accidental deaths, no infantile mortality. Both clinically and at post-mortem examination this stock has been shown to be remarkably free from disease. It may be that some of them have cryptic disease of one kind or another, but, if so, I have failed to find either clinical or macroscopical evidence of it."

The health of these rats as described by McCarrison is impressive enough. But when compared with the other rats kept by McCarrison, the results are even more impressive, for given exactly the same environmental conditions as the healthy group had, with only diets differing, all other groups of rats had diseases of all kinds including cancer.

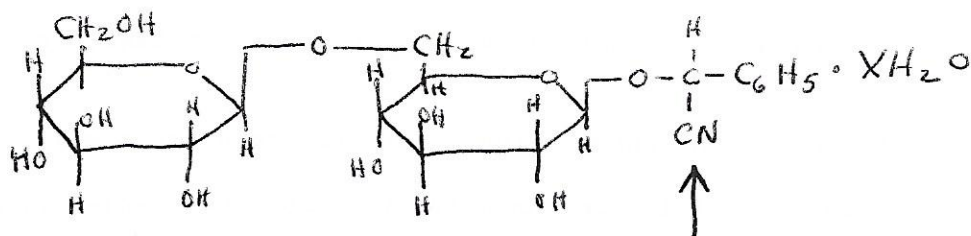
McCarrison did not invent the diets which he prescribed for the rats. He was at the time Director of Nutrition Research in India. The diet fed to each group of rats was the diet common to the peasants in a certain area of India. The healthy group of rats had been fed a diet based upon the native diet in a tiny kingdom of northwest India called Hunza. Dr. McCarrison had been practicing medicine for the Hunzakuts for about ten years and was impressed by the general health of the Hunza people. For the most part during that period of time, his medical services in behalf of the 14,000⁺ people of Hunza had been limited to the treatment of accidental lesions. Most diseases were

rare, some nonexistent, including cancer. McCarrison initiated his rat experiment for the purpose of determining whether diet or some other environmental factor in Hunza were responsible for the good health of those people. His elaborate experiment extends evidence on a scientific basis, that diet is a factor of major etiological significance for many diseases, cancer included. (For an account of McCarrison's experiment including the list of diseases encountered by McCarrison in those rats fed on diets different from the Hunzas, see Wheel of Health by G. T. Wrench M.D., London Daniel 1938.)

Laetrile

Dr. Ernst T. Krebs, Jr. of San Francisco, California has isolated a substance from nature which he claims to be effective in protecting the body from the development of cancer. It is found in more than 1,200 natural foods, but is especially abundant in the stones or seeds of certain pitted fruits such as the apricot, peach, cherry, etc., in which it may be found in concentrations of up to 1-2% by weight. (Of interest in this connection is the fact that the apricot pit is a popular food in Hunza which they eat either along with the fruit, or store for later use as a nut-like food - page 140 of Wrench). Dr. Krebs isolated this factor from apricot seeds in the early 1950's. It is known by several names including Laetrile, amygdalin, Vitamin B₁₇, nitriloside, or its scientific name: D-mandelonitrile-beta-D-glucoside-6-beta-D-glucoside. It has been known for over 100 years to the scientific world as amygdalin and has been used medicinally mostly as an analgesic. Dr. Krebs gave it the name Laetrile because it is a LAEvo rotatory niTRILE. Dr. Krebs and his father, Dr. Ernst T. Krebs, Sr. are generally acknowledged to be the first to promote its use as an anti-cancer agent.

Laetrile has the following structure:³



The key to this agent's effectiveness in destroying cancer cells is the cyanide radical denoted with an arrow in the structure. As the drug comes into contact with cells, it is acted upon by an enzyme called B-glucuronidase which is found in all cells of the body.⁴ Hydrolysis results splitting Laetrile into 2 molecules of sugar, one molecule of benzaldehyde and one molecule of HCN. The benzaldehyde is largely responsible for the drug's analgesic properties. The hydrogen cyanide reacts with another enzyme within the cell called rhodanese⁵ (sulfathiazole sulfurtransferase) incorporating the CN radical into a molecule of thiosulfate, a non toxic substance which is readily excreted by the kidney.

Laetrile's nontoxicity for normal cells and its toxicity for cancer tissue is due to the following enzyme balance. Normal cells have only a small amount of free cytoplasmic B-glucuronidase, the majority of it being bound in lysosomal pouches inaccessible to Laetrile.^{6,7,8} Normal cells vary in their amount of free B-glucuronidase, however, those cells that are the richest in this enzyme, such as hepatic parenchymal cells, are also richest in the enzyme rhodanese, the detoxifying enzyme.^{9,10} Cancer cells are rich in B-glucuronidase and almost totally deficient in rhodanese.⁶⁻¹¹ Thus Laetrile specifically intoxicates these cells while sparing the normal body cells.

Clinical and Experimental Evidence Against Laetrile

Diligent effort on the part of the interested researcher will result in the location of three articles in the scientific and pseudoscientific literature which disfavor Laetrile. These are listed below:

1. "'Cancer Cure' with a Mafia Blessing"
Medical World News 9:32-34, 37, 1968.

The objectivity of this article is discernible from its title. The article says little about the drug itself, but much in the form of slanted inferences about its promoters. The author of the article is not named.

2. "Laetrile: A Study of its physiocochemical and biochemical properties"
Levi, L.; French, W.N.; Bickis, I.J. and Henderson, W. D.
Canad. Med. Ass. J. 92: 1057-1061, 1965.

The paper describes investigation of Laetrile's effect upon cell function of invitro ^Scultures of tumor cells. The significance of this study in relation to clinical efficacy of Laetrile is questionable for the following reason. As we have seen, Laetrile is dependent for its anti-cancer effect upon high levels of B-glucuronidase and low levels of rhodanese in the cancer cells. This effect is valid only in spontaneous tumors and does not necessarily hold once the tumor is removed from the host. It has been shown that transplated tumors have levels of rhodanese activity which is not below that of normal tissue. ¹⁴ Hence the negative action of Laetrile in these in vitro studies is within the understanding of proponents of Laetrile considering the facts known about its mechanism of action. All valid animal experimentation if it is to be correlated with clinical value of the drug must be carried out in vivo and only on spontaneous, not transplated tumors.

3. "The Treatment of Cancer with 'Laetrile'
A Report by the Cancer Commission of the California
Medical Association" - no author.
California Medicine 78:320, 1953.

We will dwell upon this study in more detail than with the other two anti-Laetrile papers, the reason being that this paper is the primary reference quoted in all anti-Laetrile statements made since its publication. Such organizations as the FDA, NCI, and the American Cancer Society use this as the major source of reference in defense of their policies to ignore requests from thousands of dying cancer victims and their physicians to study and/or legalize the drug. A sequential analysis of the paper will be undertaken.

The first thing one notices in his search for the legal objectivity of this article, is that no one ventures to take credit (or responsibility) for its authorship. As previously mentioned, the author is not listed below the title as is the custom in scientific literature.

The first page of the article is devoted somewhat to the description of the drug itself and its mechanism of action, but one gets the impression that the intended effect of this part of the article is to show Dr. Krebs and his co-workers in an unfavorable light. This is accomplished by several slanted statements designed to convey the impression that Dr. Krebs is a "quack" or at best on the fringes of science. The following quote from the last paragraph of page 320 is an illustration of the sort of objectivity one finds here:

"Mr. Krebs also claims to have synthesized 'vitamin B15' which is advocated for use in arthritis and cardiovascular disease. Various other esoteric products are distributed by the John Beard Memorial Foundation, concerning which the Cancer Commission has little or no information."

Statements such as this one and others of similar vein in this article serve to illustrate to the careful reader just who is actually on the fringe of objectivism (or science). It may be of interest to state here that vitamin B15 and other "esoteric" products of Dr. Krebs have done quite well internationally, though he is still not recognized for his achievements in his own country. Soviet scientists are doing as much research presently on vitamin B15

(pangamic acid) as on any of the vitamins¹² and they acknowledge Dr. Krebs as its codiscoverer.¹³

Before continuing the discussion of the 1953 California paper, mention should be made of the number of references to scientific literature cited therein: zero.

Laetrile was used in animal experiments and the results reported in the California report. The results of the experiments were reported as follows. Negative results were obtained in "a small group of A-mice carrying C-1300 neuroblastoma giving 3 to 4 times the dosage employed in patients on a weight for weight basis." Also "Thirty dba line 2 mice --- inoculated with acute lymphatic leukemia -- given daily injections (s.c. 2 mg. per day ---) -- Laetrile exerted no effect whatsoever on the course of the disease."

Again "At the present time, we are injecting Laetrile into mice bearing ear tumors. Daily injections have been made for the past four weeks. At this time it would not appear that the drug has altered the course of these skin tumors."

In all of the mentioned cases, Laetrile seems to have had no effect on the tumors, which is exactly what one would have expected from these people's experiment from facts already known prior to the tests. As mentioned previously, Laetrile has no effect upon transplanted tumors due to the high rodanese activity in these tumors. The fact that transplanted tumors differed in this way from spontaneous tumors must have been known to the Cancer Commission since evidence of this had been appearing in the major cancer journals for some time prior to the Commission's report. The fact that they tested Laetrile in transplanted tumors at all is evidence of either a) purposeful attempt to discredit Laetrile on nonscientific grounds or b) ignorance, *Ignorance* or non objectivism to this degree should never be cleared for publication in a scientific journal.

In one of the animal experiments listed above, the tumors may not have been implants. That is in the "ear tumors" mentioned above. Without a more accurate description of these tumors, one cannot objectively assess the relativity of their study upon the efficacy of clinical use of Laetrile against cancers. The above mentioned "ear tumors" may be either spontaneous benign tumors, transplanted benign tumors, spontaneous malignant tumors or transplanted malignant tumors. We have no way of making an educated guess as to which type they were. Of the four possibilities mentioned, Laetrile could only have been expected to have an effect upon one type: spontaneous malignancies. Even allowing for the possibility that these were spontaneous malignant tumors however, the study on them gives no proof that Laetrile is not effective, because the dosages used are not given. Again, the Commission has done a poor job of reporting their work which may have been either accidental (poor science) or purposeful (poor science and poor sportsmanship). In either case, this article should not have found its way into any journal that purports to be a "scientific" journal. Also in either case, in the eyes of the not so careful reader of the article, Krebs and Laetrile are made to appear in a bad light on no scientific ground.

Continuing with our study of the 1953 California report, we quote.

"Clinical evidence discovered by the Cancer Commission.

Following the initiation of the use of Laetrile at the Los Angeles County Hospital by a member of its staff, the Tumor Board and the Research Committee of the hospital decided, with the approval of the administration, that the extraordinary claims which were being made for the agent could best be either verified or disproved by a carefully controlled clinical investigation. The Tumor Board appointed a group from its Committee on Chemotherapeutic Agents to set up and direct the investigation, the group consisting of a clinician with special experience and interest in cancer therapy, a tumor pathologist, a biochemist, and a senior resident. A substantial grant was obtained from a private foundation for the support of the investigation. The proposal was to treat a series of some 30 to 50 patients over a period of six months and to follow these patients carefully over a further period of six months, recognizing that while the true effectiveness of a therapeutic agent for cancer can only be determined by long range observations over a period of years, the initial

response and short term follow-up will serve to indicate whether or not an agent is worthy of further trial."

At this point, the reader may think from what he has read that a careful and objective, well controlled clinical trial of Laetrile is to be reported. However, such was not to be. The report follows the above statement of their good intentions with a few paragraphs of poor excuses and double talk, mixed in with a few more slams against Krebs which when all combined can be condensed to say simply that the Commission decided not to carry out the previously proposed clinical trial. (Perhaps they wished to apply the "substantial grant" mentioned above to some of their own esoteric projects). In any case, the Commission abandoned their goals of properly evaluating the drug through a "carefully controlled clinical investigation". The excuse feebly offered is that they were unable to obtain enough drug to use in their trial (an excuse which we shall later see was absurd.)

The article continues:

"With this avenue of direct investigation thus closed, the Cancer commission undertook to obtain information as to the clinical course of patients under treatment. On November 6, 1952, the chairman of the Cancer Commission, by invitation, reviewed a group of eight patients under treatment with Laetrile for cancer by various physicians at a sanatorium in Santa Monica. Six other patients had begun treatment with Laetrile at the Los Angeles County Hospital as described above. From these and other sources the Commission has been able to collect information on a total of 44 patients as listed in Table 2. All of the patients were treated by physicians in Southern California except two reported by Ernst T. Krebs, Sr., M.D., and one by a urologist in New Jersey.

"In table 1 is summarized the follow-up as far as it has been obtainable as of January, 1953. The information thus recorded constitutes proof that no objective benefit has been realized by the use of this agent in cancer." (emphasis added)

The reader should at this point examine table one, keeping several facts in mind.

1. No mention is made anywhere in the article as to what dosage was given or for what period of time.
2. The entire period of "observation" lasted for two months or less,

beginning on November 6, 1952 and ending in January of 1953.

3. Seven patients are listed in table one as "untraced with disease at last note."

4. Nineteen patients are shown by the statistics of table one to have been so ill at the start of the study as to have lived for less than two months afterward.

5. There is evidence in the unpublished, full account of this study, that the maximum total dosage used in this study was two grams (proponents of Laetrile's effectiveness against cancer recommend administration of 9 grams per day for the initial treatment of advanced cancer, which can be tapered after twenty days according to the regression of the cancer. In far advanced cases, as much as 24 grams has been administered in a single injection with no significant side effects.)

6. Eighteen patients were not lost to the study before the end of the period of observation, and were thus observed for the entire two months. Of these 18, one was apparently "cured" while six had the progress of their cancer halted, a success rate no worse than the best of other chemotherapeutics now on the market when used against a spectrum of far advanced cases of cancer. Keep in mind that all of the patients studied had received less than 1.0% of the recommended dosage of Laetrile.

With these observations listed, it is apparent that the statistics can not "prove" anything. In fact, if the cases of only those observed for the entire observation period were included, a "cure" rate of 7/18 or 39% would have been reported with the use of less than 1.0% of the recommended dosage. In any event, the numbers shown do not prove what the Cancer Commission was attempting to make them prove. One only wonders how men could make the claim of being objective men of science, then proceed to publish such illegitimate data.

It is now known¹⁵ that of the 44 patients listed, 5 of them received only two injections over the two month period and another 5 of them received only one injection. Thus these five no doubt received only 1/1,000 of the dose that Laetrile's proponents recommend. Considering the widely known fact that amygdalin is completely non toxic when given parenterally, is there any rational reason why such small doses were given and no mention was made in the published report of doses at all. The evidence continues to mount up that there has been a deliberate attempt to misrepresent the truth in this article.

Continuing with the California report:

"Subjective improvement was interpreted as being evidence of the agent's affecting the neoplasm, rather than being due to the general effect on the host, whether by metabolic or psychologic reasons. Thus all of the physicians whose patients were reviewed spoke of increase in the sense of well being and appetite, gain in weight and decrease in pain, as though these observations constituted evidence of definitive therapeutic effect." (emphasis added)

Those who have had experience in treating patients with advanced cancer will appreciate the unanimous approval of the physicians cited above. The pain and general sense of depression generally observed as symptoms of terminal cancer are a major aspect of this disease, and alleviation of these symptoms does indeed constitute evidence of "definitive therapeutic effect."

Indeed, Clark and Cumley have written in their book Tumor Topics, "Relief of pain is the most important problem in the care of the terminal cancer patient," and Current Diagnosis and Treatment by Lange says, "A valuable sign of clinical improvement is that of the general well-being of the patient. Although this finding is a combination of subjective and objective factors and may be subject to placebo effects, it none the less serves as an obvious and useful sign of clinical improvement Factors included in the assessment of general well-being include improved appetite and weight gain and increased 'performance status'!"

Thus in the quote above where the California Cancer Commission is quoted citing these results and adding, "as though these observations constituted evidence of definitive therapeutic effect." They are again showing evidence of either ignorance of the facts or a knowing will to suppress the facts.

It becomes more and more obvious, as the 1953 Cancer Commission's report is studied in detail, that the article is nothing more than an attempt, and an abortive one at that, to twist science into its anti-thesis, falsehood. One last excerpt will be quoted which appears near the end of the article.

"For analysis samples of Laetrile were submitted to the chemical laboratory of the American Medical Association, in the form of a box of four ampules containing a white crystalline powder and labelled as Laetrile. Comparison of this material was carried out by various chemical methods with a sample of amygdalin purchased on the open market. Comparison was also made between the two materials by ultra violet absorption spectra. The conclusion of this analysis and comparative study was that the Laetrile tested was essentially amygdalin with a small amount of other material present."

Thus we see that once again the California Cancer Commission has used false pretenses to obscure the truth. For we have previously seen that the Commission did not carry out an objective clinical evaluation of Laetrile with suitable controls. The excuse offered in explanation for not doing so was inability to obtain the drug. Yet in their own paper, Laetrile is claimed to be essentially the same as "amygdalin purchased on the open market." Dr. Krebs readily admits that his Laetrile is amygdalin, the compound known to biochemists and physicians for over 100 years and readily obtainable on the open market. No claims are made for Laetrile which are not made for amygdalin. Why did not the cancer commission procure enough amygdalin on the open market to carry out an objective clinical trial of the drug. It should now be obvious that objectivity and a ^{fair}~~fair~~ clinical trial was never their intent.

In conclusion, the 1953 California Cancer Commission report, which has been used for the past 21 years as the major scientific evidence against Laetrile,

is nothing more nor less than a deliberate attempt to suppress Laetrile at all costs, including that of scientific prevarication. As fantastic as it may seem, there is a discernible motive behind this attempt. The interested reader is referred to the book World Without Cancer by G. Edward Griffin due for release in July, 1974. The author of this paper also has the contents of a speech by Mr. Griffin in which the political manipulations behind the suppression of Laetrile have been briefly explained. The interested reader may contact the author for access to this speech.

Evidence in Favor of Laetrile

An excellent primary source of references on Laetrile can be obtained from a series of reprints of scientific papers which appear at the end of the book Control for Cancer Copyright 1963 by Glenn Kittler. The book is 255 pages and can be obtained in paperback edition for \$1.95 at most health food stores or American Opinion Bookstores. The first 115 pages of this book were written by Mr. Kittler. The remaining 140 pages contains reprints from medical journals. Many references can be found therein to scientific articles. The following list of articles from Kittler's book and other sources favor Laetrile.

- I. "Laetrile - the Ideal Anti-Cancer Drug?"
Manuel D. Navarro, M.D. University of Santo Thomas Journal of Medicine, Nov. - Dec., 1954 vol IX - No. 6.

This article was read before the University of Santo Thomas Medical Association, Oct. 22, 1953.

It is a brief review of the scientific basis of the theory behind Laetrile's anti-cancer activity. The article contains seven references, and it is reprinted on pp. 155-159 of Kittler's book.

II. "Five Years' Experience With Laetrile Therapy in Advanced Cancer"
by Manuel D. Navarro, M.D.

- Read at the international Union Against Cancer Symposium on Cancer
Chemotherapy For the Pacific Area, October 24th to 28th, 1957,
at Tokyo, Japan. Philippine J. of Cancer 1:289, 1957

- Reprinted in Kittler's book.

- Short discourse on the theory and mechanism of action.

- The author used Laetrile in 83 terminal cases. The maximum ^{total} dosage administered was 2 grams ~~total~~. (Average dosage ~~represented~~ by Krebs and associates is 6-12 grams per day for 20 days followed by tapering as indicated by regression of tumor) *suggested*

- The length of time of survival following Laetrile therapy ranged from 7 to 24 months.

- Nine case histories are reported.

- The Author summarizes:

"The therapeutic effects observed by the author in the advanced cases of cancer under Laetrile therapy which may be taken as proofs of the chemical reaction produced at the cancer site are as follows:

1. The antiblastic effect mirrored by the diminution in the size of the tumor or its complete regression was noted in 20%. Hemorrhage occurring some hours after the injection of the drug was observed rarely.

2. Analgesia was consistently noted in most of the patients except in a few who had undergone previous deep X-ray therapy.

3. In the few cases wherein fetor was observed, this symptom was relieved by topical application of Laetrile solution in ulcerating carcinomas, while parenteral administrations took care of the fetor associated with internal cancers.

4. Appetite improved where anorexia had been observed with subsequent gain in weight.

5. Hypotensive effect was noted in hypertensive patients suffering at the same time from cancer.

6. Pyrexia was seen after Laetrile injection in a few patients.

Though prolonged Laetrile therapy did not produce any sign of toxicity, sensitivity to the enzyme was noted in a few cases.

Based on our unpublished observations it is very likely that in early cases of cancer Laetrile may truly be curative but certainly palliative in far advanced cases."

III. "Laetrile Therapy in Cancer" by Manuel D. Navarro, M.D.

- Read in Russian by Dr. Gillow at the VIII International Cancer Congress, Moscow, July 22-28, 1962. Reprinted from the Philippine Journal of Cancer, July - Sept. 1962.
- Reprinted in Kittler's book.
- 5 case histories.
- Conclusion:

"The considerable increase in the therapeutic dose of Laetrile (nitriloside) produced more dramatic anti-blastic effects as compared to those achieved with the 50 mg dose used in 1952. These illustrative cases though few in number are sufficient to call the attention of previous investigators, who claimed to have found Laetrile (nitriloside) useless at the smaller dose range, suggesting that they try the drug again in the larger dose range."

- 11 references.

IV. "Nitrilosides (Laetriles) Their Rationale and Clinical Utilization in Human Cancer" by Ernst T. Krebs, Jr. and N.R. Bouziane, M.D., PhD. Published by the Committee For Freedom of Choice in Cancer Therapy, 1962.

- Reprinted in Kittler's book.
- Twelve case histories.
- Twenty-nine references.
- Summary.

1. Malignant tumors are focally characterized by a high concentration of B-glucuronidase and a deficiency of rhodanese.
2. Specific nitrilosides (Laetriles), which upon hydrolysis yield hydrogen cyanide, an aglycone (benzaldehyde) and a sugar moiety, have been prepared to exploit this B-glucuronidase - rhodanese pattern.
3. Following parenteral administration there appears to be released in a wide variety of selectively sensitive malignant tissues such as an excess of nascent HCN as to produce effects of definite palliative, and possibly prophylactic, consequences in human cancer.
4. Laetrile also possesses strong analgesic properties and shows no evidence of any toxicity.
5. On the basis of the results reported in this paper and those obtained by other clinical investigators using Laetrile, it is suggested that this drug might be more properly evaluated in less terminal cases untreated by other palliatives."

- V. "Chemotherapy of Inoperable Cancer - Preliminary Report of 10 Cases Treated with Laetrile" by John A. Morrone, M.D., F.I.C.S., A.S.A.S. Jersey City, N.J.
Attending Surgeon, Jersey City Medical Center

- Reprinted in Kittler's Book.

- First appeared in Experimental Medicine and Surgery, No. 4, 1962.

- Ten case histories.

- 4 references.

- Summary:

"The use of Laetrile (1-mandelonitrile-beta-glucuronoside), a beta cyanogenetic glucoside, intravenously in 10 cases of inoperable cancer, all with metastases, provided dramatic relief of pain, discontinuance of narcotic, control of fetor, improved appetite, and reduction of adenopathy. The results suggest regression of the malignant lesion.

A fall of blood pressure occurred in all cases after administration of Laetrile. This side effect was easily avoided by using phenylephrine hydrochloride C-3-1 ng. in the same syringe with the Laetrile solution.

No other side effects were noted except slight itching, and a sensation of heat in the affected areas, which was transitory in all cases.

Comparison of before and after hemograms showed definite improvement in the red blood cell count and hemoglobin in most cases. Differential blood counts and urinalysis were entirely negative."

- VI. "The Unitarian or Trophoblastic Thesis of Cancer" by Manuel D. Navarro, M.D., F.P.C.P. Philippine Journal of Cancer 3-4, page 3, 1959
- VII. "Cancer Control Through Early Diagnosis and Chemotherapy" by Manuel D. Navarro, M.D., F.P.C.P. Philippine Journal of Cancer 3-4, page 103, 1959
- VIII. "Metastatic pulmonary carcinoma treated with Laetrile" by Manuel D. Navarro, M.D. UNITAS, vol 28, July-Sept. 1955 - pp. 606-618.
- IX. "Breast carcinoma with lung and bone metastases treated with Laetrile." By Manuel D. Navarro, M.D. Santo Thomas Journal of Medicine, vol II, No. 3, May-June, 1956 pp. 196-203; Journal of the Philippine Medical Association, vol. 33, No. 1, Jan., 1957, p. 16.

Summary:

"This case report of a 53 year old female suffering from adenocarcinoma of the left breast with pulmonary and bone (pelvis and lower extremities) metastases, and spastic hemiplegia from a possible brain metastases responded very dramatically to Laetrile therapy. Radiographic examinations after six months of treatment revealed almost complete reabsorption of the densities in both lungs resulting in a preponderant picture of diffuse pulmonary

fibrosis. The previously badly eroded outlines of the pelvic bones now appeared repaired, with intense osteosclerotic reaction in the ileac bones and around the hip joints, more in the right side, and at the superior edge of the greater trochanter of the right femur. The breast cancer which was 3 inches in diameter has become fibrotic and receded to the size of a marble; auxiliary and supraclavicular metastatic lymph glands are no longer palpable. Bed ridden for nearly a year, this patient is now walking."

- X. "Chemotherapy of Cancer I. Laetrile in Cancers of the Throat." supported in part by a grant from the National Research Council by Manuel D. Navarro, M.D.; Gilberto Gamez, M.D.; Apolinar Dizon, M.D.; Antonio Perez, M.D.; Lilia Maranan M.D.; and Sol Alvarez, M.D.

- Philippine J. of Cancer 1:131, 1957

- 3 case histories.

- Summary:

"Three case of throat cancers treated with Laetrile are reported.

"With sufficient period of treatment the consistent effects observed were: Analgesia, improvement of the appetite, gain in weight, disappearance of the fetor and a diminution in the size of the tumor or metastatic lymph involvement."

- 10 references.

- XI. "Chemotherapy and the Board Anthrone Test as Means for Increasing the Survival Time and/or Rate Following Surgery or Radiotherapy of Cancer" by Manuel D. Navarro, M.D., FPCP Philippine J. of Cancer vol. 6: 725, April - June 1964

- 85 cases.

- Summary

"The writer, as a result of the above mentioned effectiveness of Laetrile in cancer even in such small doses of 100-500 mg, feels extremely hopeful that with the administration of much longer doses (5,000-10,000 mg * intravenously, maximum therapeutic effects-gauged by the BAT - should be achieved with the eventual attainment of our goal: the prolongation of the survival time of the cancer patient, or if one is habitually optimistic, the ultimate cure of cancer.†

- XII. "Critical Survey of the State of Cancer Research with Special Reference to Long-Term Medical Therapy with Nitrilosides" Part I Krebsgeschehen 1972/4 by Hans A. Nieper English translation available from Committee for Freedom of Choice in Cancer Therapy.

- Summary:

"It is outlined in detail why a long time therapy (unlimited in time) of cancerous disease is imperative and to which criteria it has to obey.

All so far known synthetical or toxic cytostatics are more or less useless for such purposes, their testing in grafted tumors proved to be misleading in respect to their clinical value. It is outlined that according to the present knowledge only the nitriloside therapy of cancerous disease. It alone complies with all the imperative needs..." [^] seems to be promising as chemical long-time therapy

- XIII. Tasca, N. "Clinical observations on the therapeutic effects of a cyanogenetic glucuronoside in cases of human malignant neoplasms." Gazz. Med. ital. 118:153-9, Apr. 1959 not in LSU or Tulane Medical school libraries, not read by author cited by Morrone (reference V) summarized by him

"In another study of 21 terminal cases, the use of Laetrile provided satisfactory relief of pain, reduction of hemorrhage and jaundice, almost constant improvement in strength and the hematological pattern, and in some cases an appreciable reduction of the neoplastic ~~mass.~~
mass."

- XIV. "Observations Preliminaires sur Quelques Cas de Cancer Traites Par Un Glycuronoside Cyanogenetigue" by Hector Guidetti (Turin) ACTA Unio Internationalis Contra Cancorm. 11: 156-158 (Article in French)

Summary: (English translation by Authur who is very poor in the French language)

"One can recognize that the topical treatment with the cyanogenetic glycuronoside named "Laetrile" of certain human cancers directly accessible, produces lytic and destructive effects on the neoplastic tissues by enzymatic mechanism of action; and consequently, one can envisage the usefulness of this medical treatment for human cancers of the rectum, cervix, and ulcerous cancers of the skin."

The is not a complete list of scientific articles favoring Laetrile.

The author included only those which were obtainable in the Tulane Medical School Library or which could be readily obtained through the Committee of Freedom of Choice in the form of reprints. All references cited except number XIII were read by the author. Number XIII was included because it was summarized by Morrone in reference number V. Many other references favoring Laetrile can be cited which the author did not have the opportunity to read due to their not being available at the Tulane Medical School or Louisiana State Medical School libraries.

Summary

Laetrile is effective therapeutically against cancer. No claim is made by its proponents as to its being a quick or easy cancer cure. Its proponents claim that it should be administered in high doses during the initial stages of treatment after which it can be tapered to control recurrence, but must be administered in small dosages for the remainder of that person's life. Its presence naturally in foods and its necessary role in the human body as prophylaxis against cancer have been the criteria for its being named as a vitamin (B17),

Cancer is a deficiency disease for which the treatment is the same as for other deficiency diseases, that is administration of large doses of vitamin until the disease is regressing, then tapering vitamin administration to a level to be maintained indefinitely. As vitamin deficiency can combine with other factors to cause symptoms (example sunlight or heat in pellagra, any stress or trauma in scurvy) so vitamin B17^{deficiency} combined with any carcinogenic agent (radiation, chemicals, trauma, etc.) can produce the symptom of cancer - undifferentiated growth of repair tissue with a resultant loss of control leading to a lump or tumor.

Xerox copies of the 1953 California report and case histories from some of the positive reports are included.

Footnotes and References

1. Robbins Textbook of Pathology, 1957 edition page 30.
2. *ibid.*
3. "Amygdalin The Non-Toxic Analgesic" a pamphlet available from The Committee For Freedom of Choice, 146 Main Street, Suite 408, Los Altos, California, 94022 (415) 948-9475) Cost 50¢
4. Sera, Y. "Aur Kenntnis der Gepaarten Glukuronsaure, III Ueber die Spaltung der Orcin- und Chloroglukuronsaure durch Organsafte," Z. Physiol. Chem., 92:261-275 (1914).
5. Lang, K., "Die Rhodanbildung im Tierkooper," Biochem. Z., 259:243-256(1933). Cf., Lang, K., Z. Vitamin-hormon-u-Ferment-Forsch, 2:288-291(1949), (a review)
6. Fishman, W.H., and A.J. Anlyan, " β -Glucuronidase Activity in Human Tissues, Some Correlations with the Processes of Malignant Growth and with the Physiology of Reproduction," Fourth Int. Cancer Research Congress, 6:1034-1041 (1950).
7. Fishman, W.H., and A.J. Anlyan, "A Comparison of the β -Glucuronidase Activity of Normal, Tumor, and Lymph Node Tissues of Surgical Patients," Science, 106:66-67 (1947).
8. Fishman, W.H., and A.J. Anlyan, "The Presence of High β -Glucuronidase Activity in Cancer Tissue," J. Biol. Chem., 169:449-450 (1947).
9. Homburger, I., and Fishman, W.H., The Physiopathology of Cancer, New York, Paul B. Hoeber, Inc., 1955, p.842.
10. Mendel, B., H. Rodney and M.C. Bowman, "Rhodanese and the Pasteur Effect," Cancer Research, 6:495 (1946).
11. Giordano, G., A. Violante, G. Lerenzelli, and U. Sapio, "Rhodanese Activity of the Neoplastic and Hemopoietic Tissue of Rats with Myeloma in Leukemic Phase," Biochimie. Appl., 3:284 (1956).
12. Fitzpatrick, W.H., Nutrition Research in the U.S.S.R. 1961-1970. DHEW Publication No. (NIH) 72-57, September, 1972.
13. Medexport, V/O, "Vitamin B 15 (Pangamic Acid) Indications for Use and Efficacy in Internal Disease," Moscow, U.S.S.R., 1968 (English translation available from the Committee for Freedom of Choice, price: \$1.50.
14. Cancer Research 12:565-572, 574-579
15. Full Report of the Cancer Commissions 1953 investigation, published in 1963 by the Calif. Med. Assn. Purchasable through them for \$17.00