

Chemotherapy of Inoperable Cancer

Preliminary Report of 10 Cases Treated with Laetrile

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The hope of the future lies in the chemotherapy of cancer. In view of deep-rooted prejudice against clinical experimentation in this field, a completely objective study and report of 10 cases should be of interest.

The use of Laetrile (1-mandelonitrile-beta-glucuronoside), a beta cyanogenetic glucoside, is based on the unitarian or trophoblastic thesis of cancer. In a review of 17,000 papers on malignant neoplasms and related biological subjects, the trophoblast was described as the *sine qua non* of cancer (1).

Rationale

The malignant lesion is characterized by a high focal concentration of beta-glucuronidase, which is a beta-glucosidase. Laetrile is a glucoside which is hydrolyzed specifically by beta-glucosidase enzymes, with production of benzaldehyde, glucose, and nascent hydrogen cyanide.

Rhodanese, the cyanide-detoxifying enzyme, is absent or relatively deficient in malignant lesions but present in normal tissues. Nascent hydrocyanic acid is released to the extent of about 10% in the vulnerable carcinomatous areas but not elsewhere in the body.

Laetrile is relatively non-toxic when administered parenterally. Orally it is extremely toxic due to the release of hydrogen cyanide on contact with the hydrochloric acid of the gastric juice.

Previous Reports

In a group of 14 cases of cancer with metastases treated with Laetrile, there was striking relief of pain with discontinuance of analgesics, disappearance of fetor from ulceration, improved appetite, and regression of the tumor (2).

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 (3).

Clinical Material

The present group included 5 males and 5 females treated in my private practice. The average age was 45, range 17 to 74. The diagnosis was adenocarcinoma of the breast 4 cases, Hodgkin's disease 3, cancer of the lung 1, cancer of the prostate 1, and cancer of the pancreas and omentum 1. Metastases were present in all cases.

Pain was a prominent symptom in all 10 cases and 7 patients required narcotics for relief.

Adenopathy was present in all cases and fetor in 1.

The average period of treatment with Laetrile was 17.5 weeks, range 4 to 43; average number of slow intravenous injections 30.2, range 6 to 79; average total dosage 46.2 gm., range 9 to 133.

Results of Treatment

Dramatic relief of pain resulted in all 10 cases after the first or second slow intravenous injection and continued throughout the course of treatment. In 5 cases pain disappeared completely and in the other 5 it was definitely reduced. Narcotics were discontinued in 5 of the 7 cases in which they were used.

After 7 injections the fetor from an ulcerating adenocarcinoma of the breast disappeared and the discharge ceased.

Adenopathy was considerably reduced in 8 of the 10 cases in which it was present.

Hemogram and Urinalysis

In all cases except #4 and #8, the blood picture was greatly improved after use of Laetrile. There was no indication of agranulocytosis or other hematogenous toxicity.

The average red blood cell count before treatment was 3,941,000, after treatment 4,515,000 (15% increase). The average white blood cell count before treatment was 10,200, after treatment 9,750 (2% decrease, statistically insignificant). The average hemoglobin before treatment was 11.65 gm. per 100 cc., after treatment 12.4 gm. (6% increase). The before and after differential blood counts showed no significant changes and no abnormal blood cells were found.

Urinalysis was negative. Kidney function was not altered or affected by the use of Laetrile.

Untoward Reactions

A sudden fall of blood pressure occurring five minutes after the injection was a common occurrence. In one case the drop amounted to 68 mm. and was accompanied by shock, requiring an injection of phenylephrine hydrochloride.

To avoid shock, I now use phenylephrine hydrochloride 0.3 mg. routinely in the same syringe with the Laetrile solution. This precaution has proved effective in maintaining a stable blood pressure during and after injections of Laetrile.

Discussion

Laetrile is not a general analgesic *per se*, although on hydrolysis it releases a small amount of benzoic acid which is analgesic. Therefore the consistent relief of pain and discontinuance of narcotics after one or two injections, lasting throughout the course of treatment, are significant results. The sudden disappearance of feter and discharge from ulcerating adenocarcinoma of the breast and reduction of adenopathy are also encouraging.

It would appear that Laetrile injections cause a regression of the malignant lesion. More cases and a follow-up study are required to evaluate the degree and permanence of this result.

Case Report

Case 1. W. L., age 62, female, married, housewife, weight 118 lb., height 62 in., blood pressure 144/95 mm. Diagnosis adenocarcinoma of both breasts with metastases to the skull, pelvis and spine. There was bilateral inguinal adenopathy. History of bilateral mastectomy, eighteen years apart, followed by deep X-ray. Urinalysis and hematology negative.

During the last six months the patient had suffered from constant excruciating pain in the back, entire spinal region, pelvis, thighs and legs. She was unable to lie down and tried to sleep in a chair. Repeated doses of codeine and other analgesics every two or three hours were required.

Laetrile 1 gm. was injected intravenously. In five minutes the systolic blood pressure dropped 12 mm. but there were no other apparent effects. The following day the patient walked into my office without aid and reported that she had slept well with very little pain, that she

needed less codeine, and that her appetite was good. Her general appearance was greatly improved.

An injection of Laetrile 1 gm. was repeated. The systolic blood pressure fell 10 mm. but there were no apparent side effects. After ten minutes she said that pain was relieved completely and stepped down from the examining table without help.

In a period of one month she received six injections of Laetrile, four of 1 gm. and two of 2 gm. In each instance there was a prompt fall of blood pressure, average 10.4 mm., range 8-12 mm.

During the period of treatment the patient returned to her housework, was almost free from pain, discontinued codein, took no analgesics other than 10 grains of aspirin at bedtime or during the night, and slept well. Her morale was excellent, her appetite good, and she gained 3½ lb. At the last examination she reported that she was completely free from pain. There were no apparent adverse effects from any of the injections. As of May 1, 1962 the hemogram showed distinct improvement in red blood cell count and hemoglobin, with no adverse changes. Urinalysis was negative.

Case 2. J. S., age 74, male, married, pattern maker, weight 163 lb., height 62 in., blood pressure 188/100 mm. Diagnosis inoperable carcinoma of the left lung with metastasis to the mediastinum. Urinalysis and hematology negative.

During the last six months the patient complained of cough, constant chest pain, dyspnea, blood-tinged expectoration, anorexia, and loss of weight (15 lb.). A X-ray revealed a mass in the left side of the chest suggestive of a neoplasm. Bronchoscopy and a biopsy established the diagnosis of carcinoma of the lung. Exploratory thoracotomy showed extensive carcinoma of the left lung with metastases and many perforations in the pleura, diaphragm, aorta, pericardium and mediastinum. The condition was considered inoperable.

Pain was so constant and severe that the patient took meperidine hydrochloride and codeine every two or three hours. When interviewed, he had such great difficulty in talking and breathing that his wife had to give the history.

Physical examination revealed icteric sclerae, pallid conjunctivae, sluggish reflexes, enlarged and tender cervical and supraclavicular glands, dullness and moist rales over the left side of the chest, and edema of the ankles extending up to the knees.

Laetrile 1 gm. was injected intravenously. In five minutes the systolic pressure dropped 28 mm. but there were no signs of shock or

other adverse effects. Three days later the patient reported that the pain had been less severe since the injection but that he had suffered for two days from pain in the left shoulder and side of the chest. Analgesics were still required.

After the second intravenous injection of Laetrile 1 gm., the systolic blood pressure fell 15 mm. but there were no side effects other than burning and itching in the left shoulder area. One week later the patient returned to the office unassisted. Pain, dyspnea and edema were considerably diminished. His color and general appearance were considerably improved.

In a period of seven weeks he received sixteen injections of Laetrile, seven of 1 gm., six of 1.5 gm., and three of 2 gm. There was a prompt fall of blood pressure following the injections, ranging from 8 to 28 mm. Pain was reduced and appetite improved but there was no weight gain. He was able to discontinue use of meperidine hydrochloride and codeine. There were no apparent adverse effects from the injections as shown by the before and after hemograms and urinalyses.

Case 3. J. G., age 40, female, married, housewife, weight 113 lb., height 61 in., blood pressure 140/90 mm. Diagnosis infiltrating carcinoma of the left breast invading the lymph nodes at all levels of the axilla, with metastases to the liver. Radical mastectomy and deep X-ray therapy. Urinalysis and hematology negative.

For the last six months she suffered from very severe pain in the abdomen and back. Meperidine hydrochloride, morphine and opium were required for relief.

Laetrile 1 gm. was injected intravenously. In five minutes the systolic blood pressure dropped 10 mm. but there were no other apparent effects. She returned the following day and reported no relief of pain.

An intravenous injection of Laetrile 1 gm. was repeated, following which the systolic blood pressure dropped 12 mm. There was considerable reduction of pain and appetite improved after this injection.

In a period of four weeks she received twelve injections of Laetrile, ten of 1 gm. and two of 1.5 gm. Pain was relieved almost entirely and only a single dose of narcotic drug at bedtime was required. Morale and appetite were improved but there was no gain in weight. There were no apparent adverse effects from the injections. Comparison of before and after hemograms showed improvement in the red blood cell count and hemoglobin following Laetrile therapy.

Case 4. J. F., age 38, female, married, housewife, weight 155 lb., height 62 in., blood pressure 160/90 mm. Diagnosis adenocarcinoma of

left breast with carcinomatosis. Mastectomy, deep X-ray therapy and castration. Urinalysis and hematology negative.

The patient complained of agonizing pain in her spine, chest, pelvis, legs, arms and head. X-ray visualization confirmed the diagnosis of disseminated metastases. Adenopathy was present. Codeine, meperidine hydrochloride and opium were required to control the pain.

Laetrile 1 gm. was injected intravenously. After fifteen minutes the systolic blood pressure rose 3 mm. There were no apparent side effects. On the following day pain was reduced, appetite improved, and the general condition was somewhat better.

A second intravenous injection of Laetrile 1 gm. was given. In five minutes the systolic blood pressure dropped 16 mm. but there were no apparent side effects. Three days later the patient reported that the pain was considerably less and she required a minimum dosage of opiates for relief.

In a period of eighteen days she received eight injections of Laetrile, five of 1 gm., two of 1.5 gm. and 1 of 2 gm. During the period of medication she showed progressive improvement and suffered very little pain. Opiates were no longer required. Morale was excellent. There were no apparent adverse effects from the injections. Comparison of before and after hemograms showed improvement in the red blood cell count and hemoglobin following Laetrile therapy.

Case 5. R. F., age 20, male, single, premedical student, weight 200 lb., height 69 in., blood pressure 114/70 mm. Diagnosis malignant lymphoma, type Hodgkin's. Condition started as enlarged cervical gland, diagnosis on biopsy. Urinalysis negative, hemoglobin 11 gm./100 cc.

Deep X-ray therapy was employed. The patient complained of weakness, dizziness, and pain in the axillae and groin. The cervical, axillary and inguinal glands were palpably enlarged. The conjunctivae and sclerae were pale and icteric.

Laetrile 1 gm. was injected intravenously. In ten minutes the systolic blood pressure dropped 6 mm. but here were no other apparent effects. Four days later the patient reported that he felt more active, had a better appetite, and had suffered no ill effects.

An injection of Laetrile 1 gm. was repeated. The systolic blood pressure dropped 4 mm. in ten minutes, no other apparent effects.

In a period of four and a half months he received nineteen injections of Laetrile, five of 1 gm. and fourteen of 2 gm.

During the period of medication the pains in the neck and groin ceased and the adenopathy disappeared. The patient felt euphoric and

his general appearance was considerably improved. There were no apparent adverse effects from the injections. The blood picture improved after Laetrile therapy.

Case 6. L. D., age 37, female, single, draftsman, weight 190 lb., height 66 in., blood pressure 280/110 mm. Diagnosis infiltrating adenocarcinoma of left breast. Both her mother and sister had died of cancer. History of radical mastectomy. Metastases in left axilla broke down, producing multiple sinuses.

The principal complaints were severe pain in the left side of the chest, necessitating the use of codeine, and a foul odor from the discharging sinuses. To control her distressing cough it was necessary to prescribe meperidine hydrochloride and opium for use on alternate days.

The left shoulder and arm were swollen and painful. The skin was glistening red. The circumference of the left mid-arm measured 19¾ in., as compared with 13 in. for the right. Adenopathy was present in the entire left axillary and supraclavicular areas, both sides of the neck, and in the right breast. The liver was palpable and tender. Both sides of the chest were tender and especially painful on coughing.

Laetrile 1 gm. was injected intravenously. In five minutes the systolic blood pressure dropped 38 mm. but there were no apparent other effects. On the following day she received a second injection. Pain and cough diminished and there was less discharge from the axillary sinuses. However, she felt a sense of heat and itching in the operative area. After the third injection pain was relieved completely and the fetor disappeared. After the fourth injection, the drainage ceased completely and the area was odorless. Multiple crusts covered the healing sinuses. Induration and inflammation were almost completely gone. The texture of the skin of the left arm had returned to normal.

In a period of five months she received fifty injections of Laetrile, nine of 1 gm., thirty-nine of 2 gm., and two of 2.5 gm. The immediate hypotensive response was easily controlled when phenylephrine hydrochloride 0.3 mg. was used simultaneously with Laetrile.

During the period of treatment the patient returned to work. Pain and cough disappeared. The discharge from the metastatic sinuses ceased and there was no more fetor. The circumference of the left mid-arm was reduced from 19¾ in. to 17 in., an indication of less tumefaction. Narcotics for relief of pain and cough were no longer required. There were no apparent adverse effects from any of the injections.

In this case treatment with Laetrile was continued from July 7, 1961 until May 1962. In the extended period of ten months the patient

received 133 injections, twice a week or oftener. Comparison of before and after hemograms showed definite improvement in the red blood cell counts and hemoglobin. Adenopathy and tumefaction regressed to a considerable extent.

Case 7. G. P., age 21, male, single, college student, weight 149 lb., height 70 in., blood pressure 110/70 mm. Diagnosis malignant lymphoma, Hodgkin's type. Urinalysis and hematology negative.

A growing mass in front of the right ear, which returned four years after its initial appearance and recession, was removed and found to contain multinucleated giant cells typical of Hodgkin's disease. There was a hard, tender, enlarged lymph node in the mid-sternocleidomastoid region measuring 3 × 2 cm. Urinalysis and hematology were negative.

Laetrile 1 gm. was injected intravenously. The systolic blood pressure dropped 4 mm. but there were no apparent side effects. Three days later the enlarged gland was smaller, softer, and less painful. By the sixth day all pain had ceased.

In a period of four months he received twenty-seven injections of Laetrile, ten of 1 gm. and seventeen of 2 gm. There were no side effects. One injection, made directly into the tumor mass, was followed by itching and local tenderness.

During the period of treatment the patient returned to college. Pain was absent, appetite good, weight increased 13 lb., and his appearance was excellent. The blood picture improved under Laetrile therapy.

Case 8. A. T., age 66, male, married, fireman, weight 120 lb., height 68 in., blood pressure 188/98 mm. Diagnosis inoperable carcinoma of the prostate with possible metastasis to the liver. Hemoglobin 10 gm./100 cc.

The patient complained of nocturia, hematuria, nausea, vomiting, and severe pain in the groin and thighs. Codeine and meperidine hydrochloride were required for relief. The skin and sclerae were jaundiced. There was painful adenopathy in both groins.

Laetrile 1 gm. was injected intravenously. In seven minutes the blood pressure dropped 68 mm. and the skin became cold and clammy. The patient appeared to be in incipient shock but responded promptly to an injection of phenylephrine hydrochloride, after which his blood pressure recovered 66 mm.

Next day an injection of Laetrile 1 gm. was repeated. His systolic blood pressure dropped 10 mm. but there was no shock reaction. Following the second injection the pain ceased and the use of narcotics was

no longer needed. Nausea and vomiting were relieved, and jaundice was reduced.

In a period of four days he received three injections of Laetrile 1 gm. During this time there was no pain and narcotic drugs were discontinued. Bleeding from the bladder ceased. Nausea and vomiting were relieved, and jaundice was diminished. Before and after hemograms and urinalyses showed no change.

Case 9. M. T., age 65, female, married, housewife, weight 110 lb., height 66 in., blood pressure 160/90 mm. Diagnosis adenocarcinoma of the pancreas and omentum. Hemoglobin 11.5 gm./100 cc. The liver was palpable and painful nodules extended to about 3 inches below the costal margin.

During the last seven months she had suffered from extreme pain and had lost 20 lb. Meperidine hydrochloride was required for relief. She was exceedingly weak, jaundiced, emaciated, and unable to stand without assistance.

Laetrile 1 gm. was injected intravenously. There were no adverse effects. A second injection was given four days later.

Pain was partially relieved and the dosage of meperidine hydrochloride was reduced. The blood picture and urinalysis showed no change under Laetrile therapy.

Case 10. F. E., age 17, male, single, student, weight 140 lb., height 71 in., blood pressure 110/70. Diagnosis Hodgkin's disease, granuloma type, with metastasis to the thorax.

During the last three months a growing mass in the left supraclavicular region had reached the size of a quarter sphere of an average orange. The patient complained of pain in both axillae, weakness, nausea and anorexia. He had lost 25 lb. and was jaundiced. Biopsy confirmed the diagnosis. The axillary lymph glands were enlarged, especially on the right side. The roentgenograms showed progressive nodal enlargement inside the thorax.

Laetrile 1 gm. was injected intravenously. In five minutes the systolic blood pressure dropped 6 mm. but there were no apparent other effects.

On examination two days later the mass in the neck was softer and smaller. By the fifth day it was reduced to about half the original size, and was softer and movable. The axillary lymph glands were barely palpable. He was free from pain and his appetite had returned.

In a period of five months he received thirty-six injections of

Laetrile, nineteen of 1 gm. and seventeen of 2 gm. There were no side effects.

During the period of treatment there was no pain and no enlargement of the supraclavicular mass occurred. Appetite improved and the patient gained 24 lb. He returned to his studies. Comparison of before and after hemograms showed distinct improvement in the red blood cell count and hemoglobin.

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 narcotics, control of feter, 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 0.3-1 mg. 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 cells count and hemoglobin in most cases. Differential blood counts and urinalyses were entirely negative.*

Summary

Possible regression of the malignant lesion was suggested by therapeutic results in 10 cases of inoperable cancer with metastases. Intravenous injections of Laetrile (1-mandelonitrile-beta-glucuronoside) provided effective pain relief permitting the discontinuance of narcotics, control of feter, improved appetite, and reduction of adenopathy. The only side effects were a fall of blood pressure and slight itching and heat sensation in the affected areas.

References

1. *Krebs, E. T., Jr., E. T. Krebs Sr., and H. H. Beard.* The unitarian or trophoblastic thesis of cancer. *M. Rec.* 163, 158-173, July 1950.
2. *Navarro, M. D.* The mechanism of action and therapeutic effects of Laetrile in cancer. *J. Philippine M. A.* 33, 620-627, Aug. 1957.
3. *Tasca, M.* Clinical observations on the therapeutic effects of a cyanogenetic glucuronoside in cases of human malignant neoplasms. *Gazz. Med. ital.* 118, 153-159, April 1959.