81 Collins Street,

MELBOURNE, C.1.

16th October, 1947.

Professor H. A. Kehoe,
College of Medicine,
University of Cincinnati,
Cincinnati,
OHIO - U.S.A.

Dear Professor Kehoe,

I was delighted to receive your letter of September 17th re Dr. Blackburn's cases of T.E.L. poisoning. I must admit it left me feeling somewhat deflated.

I have seen the excellent results of B.A.L. in arsenic poisoning and immediately after Dr. Blackburn's cases I suggested a trial of B.A.L. in ordinary dosage in a case of plumbism in a battery worker. His colic had subsided under intravenous calcium therapy. Within some twelve hours of commencing B.A.L., the most severe colic he had experienced developed. B.A.L. was stopped at once and calcium was again used successfully. Here I thought the B.A.L. had mobilized an excessive amount of lead from the skeleton in a man exposed to absorption of considerable amounts of lead over a long time and decided that, if B.A.L. were to be used at all in such cases, it should be tried only in small doses over a prolonged period to accelerate lead excretion.

However, I still felt that the coincidence of improvement immediately following B.A.L. in Dr. Blackburn's cases when it was used temporarily in large doses with relapse after the dose had been reduced considerably for some days suggested that the mass action of large doses of B.A.L. was effective in fixing the large amount of lead suddenly introduced into the body in these cases and that by so doing it had relieved the stress on the brain. In T.E.L. poisoning we need not worry usually about lead stored in the skeleton since it is practically invariably an acute poisoning due to rapid absorption of a considerable amount of lead. So I felt happy about the B.A.L. until I got your letter.

Gilman's report to you that they could not save animals given a lethal dose of T.E.L. even with the B.A.L. given before symptoms developed is a most depressing finding. And your work (the reprint from Science is not yet to hand) that the B.A.L.-Pb complex is more toxic than either of its components separately is equally disappointing. And man, I fear, will not behave differently from the animals. I have read of one case of cadmium poisoning where the B.A.L.-cadmium complex was stated to have caused renal damage and that its use was contra-indicated in cadmium poisoning, though one or two other reports have said it is useful in this condition.

There seems general agreement that it is very valuable for arsenic, mercury and gold poisoning.

The arrival of B.A.L. does, however, give one hope that some compound will be found that will be as effective in lead poisoning as B.A.L. is in these other heavy metal poisonings.

The toxic action of arsenic is attributed to an effect on the -SH groups in cells interfering with activity of the pyruvate oxidase system. Is this theory also held regarding the toxic effects of lead? Has any work been published on this chemical aspect of lead poisoning? I will be most interested to hear of your results with B.A.L. glucoside.

Dr. Blackburn has left for U.S.A. and will be calling on you. He will be intensely interested in your criticisms. Unfortunately he left before your letter arrived, so I have not been able to communicate its contents to him.

Once again I am reminded by your letter of the old trap of attributing "post hoc" to "propter hoc". In the absence of any clinical experience of such cases, the dramatic improvement following the very large doses of B.A.L. initially used by Dr. Blackburn led us astray. If the B.A.L.-Pb complex is invariably more toxic than lead itself, it does seem strange that these doses (4.4 mg per Kg. of body weight) 4 hourly for 4 doses did not make the patients worse. But their clinical condition was remarkably better for four days. Would the sedation and supportive treatment counteract such expected extra toxic effects? Does the B.A.L.-Pb complex have toxic cerebral effects? Where does it act? I know it can apparently result in severe intestinal colic. If the B.A.L.-Pb complex does not have more toxic effects on the brain than lead, can one necessarily apply the results of animal experiments to man and so not put its use to the trial of experiment in man when it apparently has had no adverse effects in these two cases?

These are merely questions which arise from your letter in which you asked for any comments. Meantime, I have sent a covering letter to our doctors here with reports forwarded from our Melbourne Office of Dr. Blackburn's two cases and your comments to me about them. I have instructed them to rely on the standard treatment and not to use B.A.L. should they be unfortunate enough to see any cases of L.E.L. poisoning.

We felt that Dr. Blackburn's report of these two cases in this country would serve to emphasise the necessity for them to be on their toes to detect any possible early cases.

I have greatly appreciated your letter and the most valuable criticisms therein and look forward to the receipt of further information from you on this interesting subject.

Incidentally, since zinc is greatly increased in the blood and liver etc. in leukaemia and in cancerous tissue, I am playing around with small doses of B.A.L. over a prolonged period in a couple of cases of leukaemia and inoperable cancer. One case of acute leukaemia first seen by me four days before death was given treatment with ordinary doses of B.A.L. without obvious effect. I do not expect anything to come from this, but in such cases anything is worth a trial if there is the remotest chance to help them.

With kindest regards,

Yours sincerely,

Keith D. Dailey