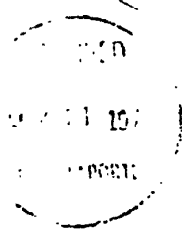


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University,
Hospital



May 16, 1971

Mr. L. Laporte,
Vice-President,
Research and Development,
Imperial Tobacco Company of Canada Ltd.,
3810 St. Antoine St.,
Montreal 30, Quebec.

Dear Mr. Laporte,

It is now nearly three years since your company generously provided \$10,000.00 to support my research concerning the cardiorespiratory effects of nicotine. Due to several delays, especially the medicare problem of last year, a fair bit of work has been accomplished and it seems timely to send you a progress report.

The first year was spent mainly on acquiring and setting up new equipment for this research. There was considerable difficulty in obtaining nicotine hydrogen tartrate in a pure and sterile solution, as the company that had supplied this product in San Francisco had gone out of business. However, our chief Pharmacist at the hospital was able to make up the drug. I have not been sufficiently confident in the preparation to inject it into humans at card catheterization as yet. Since I already had done experiments in this area, I doubt that more potentially useful results would be had from concentrating on the effects of nicotine on airways and small lung vessels.

In the spring of 1969 Dr. David Cotton joined the Laboratory as a research fellow to begin work on the cardiorespiratory effects of nicotine inhalations. It had been previously reported that cigarette smoke acutely lowered the pulmonary diffusing capacity. This was felt to be due to small vessel constriction in the lungs. However, as there were several uncertainties in the methods used, we decided to begin by repeating some of these studies. In brief, we found no effect on the pulmonary diffusing capacity from the inhalation of the smoke of 2 cigarettes in 8 normal subjects. The diffusing capacity of 6 normals was studied before and after nicotine inhalations and again no significant change was observed. Thus we are unable to find any effect of either cigarette smoke or nicotine inhalation on small lung vessels.

It has previously been shown that cigarette smoke acutely increases the resistance to flow in lung airways. This has been thought to be due to particulate matter in the smoke, rather than the pharmacologic effect of nicotine. To investigate the latter possibility we now began to measure airway resistance using the body plethysmograph before and after nicotine inhalations. We have carried out these studies in both normal volunteers with interesting and unexpected results. In a typical experiment half of the subjects show an immediate increase in airway resistance and in the others no significant change. These results are consistent,

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insofar as the bronchial reactivity response is concerned, the results on repeated testing at different occasions. Although the data are still preliminary, it suggests that individuals have differing degrees of bronchial reactivity which may determine what the bronchial reactivity results in an increase in airway resistance.

We are still planning to do further work on normals and also intend to test the effect of nicotine on what is known as the "nicotine test" in patients with chronic obstructive lung disease. It is possible that the response of these patients may be significantly different from that of normals.

The results of our laboratory work on the effect of nicotine on the bronchial reactivity response were presented at the annual meeting of the American Physiological Society in 1960, and I enclose a copy of our abstract. The attention's salary was paid from the Imperial Tobacco Company Grant, a credit to this effect will appear in the final publication now being prepared.

As a result of our grant, I have used your grant over a period of a little more than 2 years, a period of time longer than originally intended. I believe that the grant has enabled us to make considerable useful progress in the important area of smoking, nicotine, and bronchial reactivity function. As discussed above, we plan further studies in this area and would be grateful if the Imperial Tobacco Company would consider the possibility of supplying further information you may require.

Yours sincerely,

J.H. BURGESS, M.D., F.R.C.P.(C)
Associate Professor Of Medicine,
McGill University,
Director, Cardiorespiratory Laboratory,
The Montreal General Hospital.

Copies:

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