

PETER N. LEE

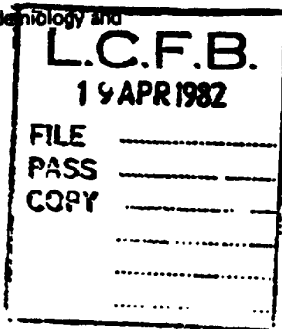
M.A. (Oxon),

Honorary Research Fellow, Institute of Cancer Research,
Division of Epidemiology

Consultant in Statistics and Adviser in Epidemiology and
Toxicology

VAT Reg. No. 317 7929 26

PNL/JH



Office:

25 Cedar Road,
Sutton, SM2 5DG.
Tel: 01-842 8265 (2 lines)

Home:

25 Park Road,
Cheam, Sutton, SM3 8PY.
Tel: 01-861 2868

April 15th, 1982

Dr. L.C.F. Blackman,
British-American Tobacco Co. Ltd.,
Westminster House,
7 Millbank,
London SW1P 3JE

Dear Lionel,

Thank you for sending me a copy of Bob Wade's letter and enclosed charts.

The charts, as he points out, do not show the fall off in lung cancer rates in the younger age groups which are occurring in the UK. They do, however, show a tendency for the proportionate rise in the younger age groups to be less than in the older age groups.

In essence this comparison is very similar to that between U.S. and England and Wales discussed by Doll and Peto recently (see enclosure A) except that the Canadian charts do not show the slight decreases seen in the U.S. male figures (Table E1) in the 30-34, 35-39 and 40-44 figures. However it should be noted that the single year 35-44 figures in the charts are based on relatively small numbers of deaths (about 100 per year) and are therefore subject to fair sampling variation.

Looking at data on cigarette consumption trends in Canada (see enclosure B) one can see that their consumption pattern appears to be much more similar to the US than the UK. Thus, whereas in the UK, men born shortly after 1900 have the highest intake, in Canada men born around the time of the second world war have the highest intake, and there is a marked post-war rise in consumption seen in Canada (and the US) that is not seen in the UK.

Given cigarettes are a major determinant of lung cancer trends it would thus be expected that, in the UK, peak male lung cancer rates for a given age group would be reached when this maximal exposure cohort reaches that age, and that is approximately what one sees. Thus, in

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Table E4 of enclosure A, peak male rates for age x occur shortly after year 1900+x. In Canada on the other hand peak male rates on the same model for age x would be expected to occur shortly after year 1940+x and thus not really be visible yet.

For females, the cohort born around 1930 is approximately maximal exposure for the UK and thus falls off in the youngest age groups can be seen recently. In Canada, on the other hand, (see Table 3.4 of enclosure B) each birth cohort up to 1956 has a higher exposure than the previous one and one would not expect to see a fall off in lung cancer rate.

Of course a problem with the data of enclosure B is that decreasing tar yield per cigarette in Canada in recent years has not been taken into account, but if one can assume Canada is similar to the US, the arguments of Doll and Peto apply, and the relative Canadian and UK trends remain unsurprising.

The question of whether changes in air pollution rather than in cigarette consumption might be responsible for the differences is an interesting and important one. I personally believe, based on results of TRC's studies in Northern Ireland and Teesside inter alia, that the Clean Air Act has contributed to some extent to reductions seen in lung cancer rates though I do not feel it likely it is the whole story by a long way. One argument that impresses me that air pollution is not likely to be the whole story is contained on pp 1300-1301 of enclosure A where it is shown that lung cancer rates have also fallen in Finland, a country where the smoking pattern was similar to that in the UK, but where air pollution has not been a particular problem. As Doll and Peto point out, there is no need to invoke an effect of decreases in air pollution to explain the relative US/UK patterns in lung cancer and the same seems likely to be true for the Canada/UK comparison.

One other minor point in the letter is that presumably "incidence of lung cancer" in the Blue Book is, as Wade suggests, age specific death rates, as incidence figures have not been available on a national basis for this period of time.

Best wishes.

Yours sincerely,



Peter N. Lee

cc: Dr. D.G.I. Felton

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