

R/F

B 93
100
FEB 15 1978
READING FILE
CIRCULATED

"Progress in the prevention of chest disease"

Notes on a one day conference held in memory of Dr. Horace Joules
on 27th January, 1978 at the Central Middlesex Hospital

Author : P.N. Lee (Tobacco Research Council)
Date : 30.1.78

Introduction

The conference had been organised by Dr. K.P. Ball in memory of Dr. Horace Joules, a former physician at the Central Middlesex who was a celebrated champion of social and preventive medicine. It was held in a new lecture theatre dominated by a large well lit "no-smoking" sign, which echoed the general tenor of the talks given. The proceedings of this conference are to be published in the British Journal of Diseases of the Chest.

Sir Richard Doll; "Lung Cancer: prospects for control"

Doll said that there were three facts which made it unlikely that the association between smoking and lung cancer was an artefact.

- (i) The wide variety of circumstances under which it had been observed.
- (ii) The evidence that the lung cancer rates of ex-smokers on giving up was much lower than that of continuing smokers.
- (iii) The latest evidence from Friberg's study. He presented a table (given below) showing for the first time data he had mentioned obliquely in Doll and Peto (1976). It seemed to me that the 5:1 excess of lung cancer cases in the heavier smoking discordant MZ twins was not significantly different from the 3:3 expected under Burch's hypothesis, though a few more deaths might, as Doll hoped, "make Burch go away".

Cases of lung cancer

Discordant* male twin pairs	Heavier smoking members of pair	Lighter smoking members of pair
DZ (different cell) 12	12	2
MZ (same cell) 5	5	1

* Discordant defined as { cigarette smoker and non-smoker,
> 10 cigarettes a day and < 10 a day or
< 20 cigarettes a day and < 20 a day

Mean discordance : 7 cigarettes a day

110083895

Doll said smoking multiplied the risk of lung cancer associated with asbestos exposure (quoting Selikoff and Hammond (1975)) and that, apart from Chinese women, where some other factor was definitely involved, and possibly uranium miners, excess lung cancer rates in all circumstances were always due to smoking.

There was no threshold effect of smoking but the question of dose-response was unresolved. Although the relationship between number of cigarettes a day and lung cancer rates observed was linear, he personally felt that, if the dose of carcinogen from smoking to the smoker could be measured accurately, then it would be shown that the dose-response relationship would be quadratic.

He discussed recent changes in smoking habits and lung cancer rates. In men, lung cancer rates had shown a sharp decrease to about half the maximum level ever achieved in those under 45 and some decrease in men up to the age of 75. In young women, lung cancer rates had decreased despite an increase in consumption. He suggested the tar reduction associated with the plain to filter switch had been responsible for the encouraging signs, though reductions in atmospheric pollution may have played some part. He said that the tar reduction had been 43% since 1965, though before this, no clear evidence was available. He criticised the industry for not testing old cigarettes, apart from one tin in the 1930's, to clarify the position and said Wald had easily got hold of many tins and that the Government Chemist would test them.

He saw future trends in lung cancer improving as a result of less noxious cigarettes, Government intervention and education. However he gave a warning that, though chronic bronchitis rates were dropping sharply, coronary heart disease rates were not. If carbon monoxide (CO) in cigarettes was related to heart disease, which was yet unproved, he said that this could be due to recent changes in cigarettes resulting in an increase in their CO yield. Though I judged it discreet not to mention the fallacy of his claim, I feel there is a good case for the industry making some public statement to clarify this issue.

Prof. Peter Elmes; "Asbestos and mesothelioma"

Elmes described some of the early difficulties in diagnosis of mesothelioma and in recognising the association with asbestos. He said that he had recently learned that there were two villages in Turkey, Karain and Tuzkoy, in which 50% of the inhabitants died of mesothelioma between the ages of 30 to 55 without there being any evidence at all of asbestos exposure. He had gone out to Turkey as part of a deputation to investigate the position, and had observed that in both villages the inhabitants lived in caves or houses carved out of the same local rock. In other villages nearby, though, there was zero

110033896

evidence of mesothelioma despite similar circumstances, but on examination of samples of rock from all villages it could be seen that, in the two affected villages only, the rock had particles of similar size to asbestos.

This finding added weight to the view that it was the size of the particle, and not asbestos itself which was important. Man-made fibres, though no evidence had been found as yet to relate them to mesothelioma, should be looked at in this light. He noted finally that, in Arizona, they were mining a similar rock to that in Turkey, to use as a substitute for asbestos!

|| Cigarette fibres?

Prof. Charles Fletcher; "The changing face of chronic bronchitis"

Fletcher summarized the history of a number of theories of the aetiology of chronic bronchitis (CB). He thought exposure to industrial dusts bore little relationship to CB. If one studied the occupation of men with the highest standardised mortality ratios from CB, it could be seen that rates were similarly relatively high in their wives. Also it had been shown that there was no relationship between level of simple bronchitis and measured total lung dust.

He pointed out that there was a large social class effect in CB which could not be explained in terms of smoking, air pollution or migration down the social class scale due to illness from bronchitis. He could not account for the marked decrease in death rates from CB in recent years; he did not think reductions in air pollution had played a major part in this.

He summarized the role of smoking based on conclusions from his study of post office workers. He said most (75%) smokers had normal rates of loss of ventilatory capacity, as measured by FEV, and as a result were not at risk of getting CB. The remainder however lost FEV more quickly and as a result ran into problems at age 60 or 80. However, if they stopped smoking, their rate of loss of FEV would return to normal rates and their expected life span, provided stopping was early enough, could be very markedly improved.

Force of smoking habit

In theory therefore, an attractive way to get people to stop smoking was to measure their FEV and tell those with levels low for their age that they had a special problem. In practice, FEV was so inaccurately measured that many measurements over a considerable span of time would be needed to detect the "reactive" smokers accurately. What was needed was a sensitive test which correlated with rate of FEV loss. A number of sensitive tests, including closing volume and reduction in arterial oxygen tension did not and were therefore useless as predictors of CB. There were other tests though which

110083897

showed promise in this respect, including the nitrogen washout test.

Among other points he noted were

- (i) It is much easier to persuade people to stop smoking if they can be told they have a particular problem. Prof. G.A. Rose has persuaded 60% of smokers to stop after a heart attack.
- (ii) He had heard of a woman who smoked 30 cigarettes a day then switched to 30 herbal cigarettes for a year then gave up. She showed all the symptoms of nicotine withdrawal!
- (iii) NSM containing cigarettes produce a small improvement in CB indicators as compared with normal cigarettes.
- (iv) Neither infections nor sputum-production are correlated with permanent FEV loss and are thus not related to the disease of severe airflow obstruction. This disease does not occur (apart from in asthmatics) in non-smokers.

Prof. Patrick Lawther; "Air Pollution"

Lawther talked amusingly but mostly anecdotally about air pollution. He said smoke pollution was mainly due to domestic coal fires burning inefficiently. Power stations with their high chimneys and efficient burning contributed very little to urban pollution. Benzpyrene in the air was not related to respiratory disease as gas workers were exposed to colossal concentrations with no apparent effect. He showed from a diary study in 1959-60 how episodes of bronchitis were linked to peaks of smoke and SO₂. Similar studies in London nowadays showed no correlations as levels of smoke (especially) and SO₂ had dropped so much they were not a problem for bronchitics. A comparative study of cohorts of children born before and after the great smog showed no differences in respiratory infections in childhood. However pneumonia in childhood had been shown to have an effect in this respect. One interesting recent study by Elwood in a Welsh town had shown that respiratory illness was highest in families living in new houses at the top of a hill, intermediate in these in older houses half-way down, and lowest in the oldest houses in the valleys.

Sulphur dioxide

Dr. Keith Ball; "Horace Joules and the Central"

Ball gave a picture of a hard-working chest physician who was concerned with problems of people at all levels. Joules applied pressure wherever he

110033898

thought relevant action was not being taken. For example he wrote to the Lancet in 1953 inquiring why no action had been taken following Doll and Hill's finding that smoking caused lung cancer.

Mr. Laurie Pavitt; "Parliament's Responsibility for Prevention"

Pavitt explained that, in practice, Parliament has minimal control over the National Health Service. Most decisions were made by the Cabinet, whose executive power was steadily increasing as compared with backbench parliamentarians. He outlined the Select Committee procedure with reference to Renée Short's Committee on Preventative Medicine which had made 58 recommendations. As a result the Government were proposing a bill with 65 decisions, accepting 32 recommendations, 8 with reservation, rejecting 8 and shelving 16 for further consideration. One likely result of this was that the new NHS structure set up in 1973 would be changed, probably, he felt, at the expense of the Area Health Authorities. He commented that the debate on the resulting bill will be very poorly attended, despite the economic savings to be made by prevention.

He concluded by saying that he wanted to see a Health Service rather than an Illness Service, and that education was basic to prevention - not least for M.P.'s. He never mentioned smoking at all.

Prof. David Miller; "Acute Respiratory Infections"

Miller underlined the difficulties in assigning causes of death for influenza, bronchitis and pneumonia. He showed the large increases in cardio-respiratory deaths which occurred in the winters of 1968-69 and 1969-70 when there was a flu epidemic, as compared with 1966-67 when none occurred. He mentioned the big social class gradient for bronchitis, emphysema, asthma and pneumonia and presented a table giving the latest (1971 census) Registrar General's figures now available. I managed to note half the table as follows:

Standardised Mortality Ratios

		<u>Professional</u>	<u>Intermediate</u>	<u>Skilled Non-Manual</u>	<u>Skilled Partly Manual</u>	<u>Skilled</u>	<u>Unskilled</u>
Bronchitis	Male	36	51	82	113	128	188
Emphysema & Asthma	Female*	41	60	74	125	130	189

* = Married

The trends were similar for pneumonia.

110083899

He said that, despite the isolation of numerous viruses, only 25% of respiratory infections were related to known viruses. The problem of bacterial respiratory infections had been solved until the recent emergence of legionnaire's disease. He showed that the Hong Kong (Asian) Flu Virus was similar antigenically to the virus causing the flu epidemic of the 1890's. Those old people exposed then had resistance to Asian flu when it occurred.

Similarly "Red Flu", which recently arrived in the U.K. was similar to the A Virus of 1947-57. However, though in theory those over 25 or so should be immune, in fact people over 50 appeared to have lost their antibodies.

Dr. Martin McNicol; "Tuberculosis in Brent"

McNicol demonstrated that, though tuberculosis in the area had fallen for many years, it was now rising again. The cause was related to immigrants (mainly from Africa and Asia) bringing in latent tuberculosis, not detectable at Heathrow on arrival, which became active a few years later. Though mortality was low, this was causing a problem and efforts were planned to increase case-detection rates in the immigrant.

Dr. John Edwards; "Acute Respiratory Infections"

Edwards read his talk fast in a flat Welsh monotone at a very technical level. He was describing mechanisms of hypersensitivity reactions such as farmer's lung but no clear message came over. After the talk Sir George Godber Chairman for the afternoon session, said that he had been confused about the subject before he started and was now confused at a higher level. Sentiments with which the audience agreed!

Sir George Godber; "Horace Joules and the Hope of Prevention"

Sir George quoted Joules' letter to the Lancet in 1953 which Ball had also referred to. In it he had criticised the Chief Medical Officer of Health's report which referred to the "mysterious and inexorable rise of lung cancer" after Doll and Hill's paper. Joules had outlined the need for action then, and Sir George did not feel the action taken 25 years later was adequate. The WHO, for example, had made no move till 1970. Sir George deplored the situation where it was illegal to advertise a cancer cure but legal to advertise smoking, a carcinogen. He felt smoking should be seen as an infestation of the home, to be wiped out like head lice.

Rather illogically at first sight (as never smokers only have a life expectation about 3 to 4 years higher than the average smoker) he pointed out

110033900

that, between 1900 and 1945, the expectation of life had increased 45% whereas, between 1945 and 1975, the increase had been only 5%. However, it became clear later that, in fact he was not blaming smoking wholly. He quoted the UCLA study in Alameda County, where the population had been classified as positive or negative on each of 7 "good health practices" including non-smoking. (He did not list what these practices were in full and as yet I have been unable to find reference to any published paper giving them in detail). The findings were that, at age 45, those men with 3 or less positives had a life expectation of 21.5 years, whereas those with 6 or 7 had one of 33.1 years. The difference, 11.6 years, was striking and also large (7 years) in women. The results were well known in Alameda County. However, 5 years after publication of the results, the survivors had shown no change in the 7 practices.

Although the study appeared to be showing that education made no difference, he criticised the state of affairs in the U.S.A. where only \$6m. was spent on anti-smoking propaganda as against \$120m. on subsidies to tobacco growers and \$400m. on advertising of cigarettes. He felt restriction of advertising was needed, quoting the effect it had had in Norway.

The action the medical profession should take is to embarrass the Government as much as possible, not only in regard to smoking but also with regard to fluoridation of water and spot checks of blood alcohol among others.

110083901