

## Pulmonary Tuberculosis in the Aged European in Central Africa

BY

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In view of the increasing white population, it became necessary at the beginning of 1953 to set aside special accommodation in Bulawayo for the treatment of Europeans affected with pulmonary tuberculosis. For this purpose a block of 10 beds was allotted in the City Infectious Diseases Hospital, and 73 of the 75 patients dealt with in this paper were admitted there, the remaining two being treated in a private hospital. The 73 patients in the City Infectious Diseases Hospital occurred out of a total of 129 new patients admitted there for the period under review—January, 1953, to the end of April, 1960. Most of them came from Matabeleland, with a European population of about 70,000, but a few came from other provinces in S. Rhodesia and from N. Rhodesia and Nyasaland.

Of the 75 patients, 47 were referred privately and 28 were honorary patients, i.e., three ministers of religion, one nun, ten old age pensioners and 14 indigent and other welfare cases, of which a number were alcoholics.

Examination of the ages of newly-discovered cases showed that a sudden increase in the average age of admissions became apparent about the beginning of 1959, and this increase

was carried over into the first four months of 1960.

All children with primary tuberculosis are excluded from the review. The youngest case with adult type of disease is a boy of 15 years. The ages considered are those at time of diagnosis or first admission, and all re-admissions are ignored.

*Table I*

SHOWING NUMBER OF ADMISSIONS OF NEW CASES, AND THEIR AVERAGE AGES, FOR THE PERIOD 1953-58 INCLUSIVE

Period	1953	1954	1955	1956	1957	1958	Total
New Admissions .....	8	6	12	6	11	12	55
Average Ages .....	44	35	42	41	47	41	42

The essential data is set out in the tables. Of the 55 admissions in the period 1953-58, 32 were females with an average age of 37 years and 23 were males with an average age of 50; there were seven tuberculo-silicotics in the group, all males—average age 57. This to some extent weighed the average age of the male admissions as against the female (Table I).

Of the 20 admissions in the period 1959 to April, 1960, inclusive, there were three women of average age 66 and 17 men of average age 58; the mean age for the 20 patients is 59 (Table II).

*Table II*

SHOWING TOTAL ADMISSIONS FOR THE PERIOD 1959 TO APRIL, 1960, INCLUSIVE, AND THEIR AVERAGE AGES

Period	1959-April, 1960, Inclusive
New Admissions	20
Average Age .....	59

### STATISTICAL EXAMINATION

From the figures set out in the tables a number of interesting questions are raised. The mean age of the 1953-58 group of 55 new cases is 42 years, with a standard deviation of 15.4.

The mean age of the 20 new cases in 1959 to April, 1960, inclusive, is 59 years, with a standard deviation of 17.1.

The standard error of the difference is 4.3. The mean age difference of 17 years between the two groups is almost four times the standard error of the difference, which makes it a matter of extreme improbability that the difference could arise by random sampling.

Chi-square is 6.7, which with one degree of

freedom falls between a P of 1 per cent. and 0.1 per cent., which also confirms that the difference is very unlikely to have arisen by chance.

#### RECOGNITION OF ELDERLY CASES

It is interesting to examine how some of the elderly cases of pulmonary tuberculosis in this series came to light—often, as it were, incidentally, following their admission to hospital for some apparently unrelated condition.

One man of 83 was admitted to hospital with "pneumonia" and was found to have bilateral fibro-caseous disease with cavitation; a chest X-ray taken five years previously had been normal. A man of 82 developed tuberculous laryngitis; a chest X-ray showed bilateral apical disease. He had had an unexplained episode of haemoptysis investigated at a large South African hospital three years before, but an "immigration" chest film taken two years before the onset of his laryngitis was reported as being normal by a radiologist. A woman of 83 was admitted to hospital with pneumonia and congestive cardiac failure. Her X-ray showed extensive bilateral pulmonary fibrosis, and a subsequent gastric lavage was positive for the tubercle bacillus. A man of 74 was admitted to hospital for urinary investigation. He complained of dysuria and marked frequency of micturition. Abnormal physical signs were noticed in his lungs, and X-ray showed extensive bilateral fibro-caseous disease; he was also found to have tuberculosis of the kidneys and bladder.

A man of 68, who was known to have third stage silicosis and some degree of cor pulmonale, was admitted to hospital in severe congestive heart failure. He was noted to have a low-grade pyrexia, and gastric lavage was positive for the tubercle bacillus.

A man of 73 and one of 70 were suffering from both bronchogenic carcinoma and pulmonary tuberculosis. It was the exacerbation of their chest symptoms and chronic ill-health by the carcinoma which in each case led to the recognition of their pulmonary tuberculosis.

#### DISCUSSION

To the public at large, and perhaps to some members of the medical profession, conditioned by recollections of Haworth Parsonage and The Lady of the Camellias and similar literary legacies of the Victorian and Edwardian era, pulmonary tuberculosis is scourge of the gifted or tragically beautiful young. That this may have been so 25 years ago will be agreed by any doctor who dealt with the disease in pre-

World War II Britain. He will remember the enormous artificial pneumothorax clinics, with their rows of pretty chattering girls waiting their turn.

That there has been a change of emphasis in the attack incidence since the war has not gone unnoticed in other countries. Thus the notification rate for pulmonary tuberculosis in men over the age of 65 almost doubled in England and Wales in the 16 years from 1938 to 1954 (Wilkins, 1956). This changing incidence is not due entirely to the fact that there is now an increased number of elderly persons in the population. Thus in the 1957 Glasgow mass X-ray campaign the yield of active pulmonary tuberculosis was 7 per 1,000 examined in those over 60, compared with 4.37 per 1,000 examined in the age group 15-59 years (Glasgow Corporation, 1958; quoted by Smith, 1959).

It is too often assumed by the medical profession that pulmonary tuberculosis in the elderly is a smouldering long-standing infection, perhaps manifesting itself under the guise of "chronic bronchitis" or "smoker's cough," and spreading infection among the younger members of the household. Smith (*loc. cit.*) has adduced evidence that the reverse is often probably true, and shows that in his series of 100 elderly cases of tuberculosis in Glasgow at least three were infected by younger members of the family. In the Matabeleland series one man of 53 was almost certainly infected by his young daughter. Smith also discovered that the disease, far from being chronic, is of recent origin in many of his elderly cases.

Among the 20 cases of average age 59 discovered in 1959 to April, 1960, three were women and 17 men. These numbers are too few to assess statistically, but are highly suggestive that in the older age group men are much more susceptible to pulmonary tuberculosis than women. This may be accounted for by the fact that old men, especially when living alone, are not so well able to look after their nutrition and hygiene as old women. The home circumstances of 10 of the 17 men in the group were in fact excellent, but in seven were unsatisfactory, and alcoholism played a part in some of these cases.

What is really surprising in this Matabeleland series is the sudden recent change of emphasis in the age pattern of infection. No explanation is offered for this sudden change, but it is a principle of statistical method that it rarely happens that an effect is brought about by a single cause (Moroney, 1956); and it may be assumed that a variety of factors have come

into play, such as an ageing population, a loss of acquired resistance with increasing age, more awareness of the possibility of the infection in old age, readier access to radiology and rising cost of living with lowered living conditions. But while these factors may to some extent explain the greater frequency with which pulmonary tuberculosis is diagnosed in old age, they fail to account for the sudden decrease in younger people.

The illustrating cases in this article show that infection may be most insidious and only revealed when some coincidental or apparently unrelated condition leads to the patient being fully investigated.

It seems to be implicit that any elderly patient who starts to fail physically without obvious cause should have his chest X-rayed with pulmonary tuberculosis in mind, and any evidence of old infection, such as pleural thickening or pulmonary fibrosis, even if apparently inactive, should be viewed with the greatest suspicion and lead to further investigation.

One of the most gratifying features of the present series has been the way some of these elderly patients with pulmonary tuberculosis have been restored to robust health with adequate treatment.

#### SUMMARY

The average age of 55 European patients discovered to have pulmonary tuberculosis in Matabeleland between 1953 and 1958 inclusive was 42 years.

The average age of 20 patients diagnosed in 1959 and the first four months of 1960 was 59 years.

This difference is statistically significant and very unlikely to have arisen by random sampling.

No explanation is offered for this sudden increase in age, but some of its implications are considered.

It would be interesting to know if a similar sudden change in the natural history of the disease has occurred among Europeans and Africans in other parts of Central and Southern Africa.

#### REFERENCES

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