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# CIBA 32644-Ba and Spermatogenesis in Man

## *Preliminary results*

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### *1. Introduction*

LAMBERT, SINARI and TRIPOD (1965) have demonstrated that the schistosomicide CIBA 32644-Ba may exert a transitory effect on spermatogenesis in the rat, dog, and monkey. It was therefore considered essential to attempt to determine whether any such effect was observable in man.

### *2. Material and Methods*

11 males of ages ranging from 19 to 40 years were selected at random from among the patients receiving CIBA 32644-Ba for the treatment of *Schistosoma mansoni* infections. Samples of semen were collected and examined according to the techniques described by WELLS (1956) before and at various intervals after treatment. The dosage schedules employed are summarised in Table 1. The normal range for the total spermatozoa count according to WELLS is 200-400 million or 80-150 million per ml of semen. The morphology is considered normal when less than 25% of abnormal spermatozoa are observed in stained preparations. At least 80-90% of spermatozoa should be active at the first examination.

### *3. Results*

Examination of the semen of the 11 subjects on a total of 24 occasions yielded the following data, which are summarised in Table 1.

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TABLE 1  
Summary of seminal examinations made before and after treatment with CIBA 32644-Ba

| Case No. | Age (years) | Treatment      |                 | Days between start of therapy and examination | Morphology          | Seminal examination |        | Volume (ml.) | Sperm count ( $\times 10^6$ /ml.) |
|----------|-------------|----------------|-----------------|---|---------------------|---------------------|--------|--------------|-----------------------------------|
|          |             | Dosage (mg/kg) | Duration (days) |   |                     | Motility after:     |        |              |                                   |
|          |             |                |                 |   |                     | 1 hr.               | 3 hrs. |              |                                   |
| 23       | 25          | 33.5           | 5               | 11  | Normal              | ++                  | +      | 3            | 75                                |
|          |             | 45             | 5               | 12  | Normal              | ++                  | +      | 5            | 70                                |
| 27       | 36          | 36             | 8               | 5   | Normal              | ++                  | +      | ?            | 200                               |
|          |             | 45             | 2               | 11  | Normal              | ++                  | +      | ?            | 90                                |
| 28       | 36          | 36.5           | 5               | B.T.  | Normal              | ++                  | +      | ?            | 150                               |
|          |             | 45.5           | 5               | 11  | Normal              | ++                  | +      | ?            | 210                               |
| 29       | 19          | 40             | 6               | B.T.  | Normal              | ++                  | +      | ?            | 90                                |
|          |             | 50             | 4               | 11  | Normal              | ++                  | +      | ?            | 250                               |
| 30       | 22          | 30             | 10              | B.T.  | Normal              | ++                  | +      | ?            | 100                               |
|          |             |                |                 | 11  | Normal              | ++                  | +      | ?            | 45                                |
|          |             |                |                 | 41  | Normal              | ++                  | +      | ?            | 82                                |
|          |             |                |                 | 72  | Normal              | ++                  | +      | 3.6          | 120                               |
| 31       | 36          | 38.5           | 10              | B.T.  | Normal              | ++                  | +      | ?            | 60                                |
|          |             |                |                 | 14  | Normal              | ++                  | +      | ?            | 100                               |
| 32       | 36          | 27.5           | 7               | B.T.  | Normal              | ++                  | +      | ?            | 200                               |
|          |             |                |                 | 8   | Normal              | ++                  | +      | ?            | 100                               |
| 36       | 35          | 30             | 7               | B.T.  | Normal              | ++                  | +      | 3            | 130                               |
|          |             |                |                 | 11  | Normal <sup>1</sup> | ++                  | +      | 3            | 145                               |
| 43       | 39          | 26             | 7               | B.T.  | Normal              | +                   | +      | 2.5          | 20                                |
|          |             |                |                 | 10  | Normal <sup>1</sup> | +                   | —      | 1.5          | 1.5                               |
| 44       | 40          | 29             | 7               | B.T.  | Normal              | ++                  | +      | 3.5          | 160                               |
|          |             |                |                 | 11  | Normal <sup>1</sup> | ++                  | +      | 3            | 130                               |
| 48       | 40          | 29             | 7               | B.T.  | Normal              | ++                  | +      | 1            | 230                               |
|          |             |                |                 | 9   | Normal <sup>1</sup> | ++                  | +      | 2.5          | 180                               |

B.T. = before start of treatment.

<sup>1</sup> = specimens examined by May-Grunwald-Giemsa, Giemsa and PAS techniques.

In all the specimens spermatozoan morphology was considered to lie within the normal range. No significant differences in motility were observed in any case between specimens collected before or at various intervals after treatment. The sperm count in specimens collected before treatment was within the normal range except in Case 43 and possibly Case 31. In Case 43 a significantly low total count of 50 million was found. Following treatment no significant changes in the count were observed in 8 of the 11 patients. Cases 27 and 30 presented a decreased count per ml of semen 1 day after the end of treatment. Case 30 was examined again 1 and 2 months later. After 1 month the count/ml had increased to within the normal range and after 2 months was still higher. Case 43 showed a lower count 3 days after the end of treatment than before but both counts were grossly reduced.

#### *4. Discussions and Conclusions*

Our study has shown that a slight reduction in the sperm count may have occurred in 3 of the 11 patients treated with CIBA 32644-Ba. Of these 3 cases, one patient showed an abnormally low count before starting therapy and the picture after treatment cannot be considered significant. In one of the remaining two cases no record was obtained of the *total* count. The count per ml, while apparently reduced 1 day after the end of treatment with what we now consider to be an unnecessarily high dosage, still remained within the range regarded as normal. In the last case an apparent depression 1 day after the end of treatment (again no *total* count is available) reverted to normal within the next month.

In this series which includes patients treated with roughly double what is now considered the probable optimal dosage, it can be concluded that CIBA 32644-Ba produced no significant inhibitory effects on spermatogenesis as far as can be observed by the examination of semen by accepted standard techniques.

#### *Summary*

A group of 11 patients, between the ages of 19 and 40 years, with *schistosomiasis mansoni* was treated with CIBA 32644-Ba in doses of 26-50 mg/kg daily for 4-10 days. The author concludes that treatment had no significant effect on spermatogenesis. Sperm was examined before and at different intervals throughout the treatment by the standard methods described by WELLS.

*Résumé*

Dans une série de 11 malades, âgés de 19 à 40 ans et traités, pour une bilharziose à *S. mansoni*, par des doses de 26 à 50 mg/kg/jour de CIBA 32644-Ba pendant 4 à 10 jours, l'auteur conclut que le traitement n'influence pas la spermatogénèse de façon significative. L'examen du sperme a été pratiqué avant et à différents intervalles après le traitement, selon les techniques standard décrites par WELLS.

*References*

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