

## RETENTION OF HELMINTH EGGS IN SCREENS ORDINARILY USED IN STOOL CONCENTRATION TECHNIQUES

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### RESUMO

A fim de investigar a possibilidade de retenção de ovos de helmintos de fezes pelas diversas telas comumente utilizadas nas técnicas de concentração, foram examinadas 24 amostras de fezes humanas pelo método de concentração de Hoffman, empregando-se gaze comum e peneiras de nylon.

Verificou-se que a gaze comum retém quase 50% mais ovos de *Ascaris lumbricoides* do que a peneira de nylon.

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Concentration techniques either for simple demonstration or for quantitation of helminth eggs in stools are largely used. In most of these techniques the stool specimens, after stirring, are passed through a screen to retain the detritus. For this purpose several types of screens are in use. In the Hoffman's technique<sup>2</sup> ordinary gauze is used while in other techniques plastic or metallic screens have been employed<sup>1</sup>. The possibility of retention of helminth eggs in these screens, has never been seriously investigated.

24 stool samples were examined by the Hoffman's technique. Each specimen, after through stirring, was divided in two portions of 0.5 g: one portion was passed through a two-fold ordinary gauze while the other went through a 12-holes/cm<sup>2</sup> nylon screen.

All the stool samples had been previously examined and the following results were positive for *A. lumbricoides*; 3 for *A. lumbricoides* and *T. trichiuris*; 3 for *A. lumbricoides* and hookworms; 2 for *H. nana*, 2 for *H. nana* and *T. trichiuris*, 2 for hookworms and 1 for *S. mansoni*.

For each stool specimen, helminth eggs were counted both in the sediment layer and in the detritus left in the screen after filtration. For the latter purpose the debris were stirred and left to sediment in a conic glass. Both materials were examined after 6-12 hours of sedimentation and eggs were counted in 0.1 ml of the sediment.

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Results are presented below as percentuals of egg retention over the total number of eggs counted in the sediment. **Ordinary Gauze** — 6.5, 32.7, 27.2, 8.8, 11.4, 15.8, 3.6, 0, 2.7, 22.0, 5.4 for *A. lumbricoides* samples; 14.1 and 0, 20.4 and 0, 5.4 and 0, for *A. lumbricoides* and *T. trichiuris* samples; 5.8 and 0, 8.0 and 0, 0 and 0 for *A. lumbricoides* and hookworm samples; 13.7 and 30.0 for the *H. nana* and 9.9 and 0, 42.8 and 0 for *H. nana* and *T. trichiuris* samples; 16.1 and 0 for hookworm samples and, finally, 26.2 for *S. mansoni* samples.

**Nylon screen** — 5.9, 14.0, 13.6, 2.1, 5.4, 6.4, 0.6, 0, 0, 24.5, 25.2, for *A. lumbricoides* samples; 13.3 and 0, 14.8 and 0, 21.4 and 0, for *A. lumbricoides* and *T. trichiuris* samples; 1.9 and 0, 10.5 and 0, 22.2 and 12.5 for *A. lumbricoides* and hookworms; 17.4 10.8 for *H. nana* samples; 2.0 and 0, 0 and 4.7 for *H. nana* and *T. trichiuris* samples; 0 and 0 for hookworm samples and 5.9 for *S. mansoni* samples.

The high percentual of egg retention found in some specimens

show that this can be an important cause of variation in egg counting.

Although the data presented in this paper are not particularly suitable for statistical analysis, the average values obtained in 11 single infection samples of *A. lumbricoides* show that ordinary gauze retains almost 50% more eggs than nylon screen. However, these data are not statistically significant probably due to the small sample size.

#### SUMMARY

In order to investigate the possibility of retention of helminth eggs in screens commonly used in concentration techniques, 24 human stool samples were examined by the Hoffman's technique. Ordinary gauze and nylon screens were used. It was found that ordinary gauze retains almost 50% more eggs of *Ascaris lumbricoides* than nylon screens.

#### REFERENCES

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2. PESSOA, S.B. — *Parasitologia Médica*. Editora Guanabara Koogan S.A. Rio de Janeiro (GB), 8ª edição, 1972.