

## Topical Chloramphenicol/ Gentamicin in the Empirical Treatment of Acute Conjunctivitis – Is It Rational?

Sir,

Acute conjunctivitis is the most common eye infection encountered in clinical practice. The use of topical chloramphenicol/gentamicin in the empirical treatment of this condition is widely practised. The use of chloramphenicol in conjunctivitis cases has been recommended<sup>1</sup>. There is no published data on the types of bacteria causing acute conjunctivitis in Malaysia. The results of studies done elsewhere may not reflect the true situation here. Therefore we investigated the validity of this practice in the context of our hospital situation. We believe the results of our study which we report here will be useful to general practitioners in the correct choice of antimicrobials for the effective management of acute conjunctivitis.

A total of 527 patients with acute conjunctivitis (302 males and 225 females), aged one day to 80 years, was studied for bacterial pathogens. Of the 527 cases, 218 had ophthalmia neonatorum and 309 had acute conjunctivitis. Culture was positive in 306 (58%) cases. The gram positive organisms [*Staphylococcus aureus* (26.6%) followed by *Staphylococcus epidermidis* (10.6%)] were the predominant isolates in ophthalmia neonatorum as well as in acute conjunctivitis. However, among the gram negative isolates *Pseudomonas aeruginosa* (7.4%) was predominant in cases of acute conjunctivitis while *Haemophilus influenzae* (6.1%) was the principal organism in cases of ophthalmia neonatorum.

In-vitro antibiotic sensitivity test results showed that chloramphenicol was effective against the majority of gram positive isolates and some of the gram negative bacteria, the exception being *P. aeruginosa*. Gentamicin was effective against most of the gram negative bacteria, especially *P. aeruginosa* but not against gram positive isolates. The antibiogram of the bacterial isolates in our study revealed that the overall sensitivity of all bacterial isolates was highest to chloramphenicol

(94.7%), followed by gentamicin (89.8%). These results support the rationale of using topical chloramphenicol/gentamicin in the empirical treatment of acute conjunctivitis in situations where microbiological diagnostic facilities are not available, or in the institutions pending the receipts of laboratory reports.

Hence, we conclude that the use of topical chloramphenicol/gentamicin in the empirical treatment of acute conjunctivitis in our local situation is justified, although this practice was based on the experience of studies done elsewhere<sup>2,3</sup>.

A Subramania, PhD, S C Reddy, MS (Ophth)\*,  
Department of Medical Microbiology and  
Ophthalmology\*, School of Medical Sciences,  
Universiti Sains, 16150 Kubang Kerian, Kelantan

### References

1. Editorial. The choice of antibiotic eye drops. *Drugs Ther Bull* 1972;10 : 45-7.
2. Seal DV, Barrett SP, McGill JI. Aetiology and treatment of bacterial infections of external eye. *Br J Ophthalmol* 1982;66 : 357-60.
3. Mahajan VM. Acute bacterial infections of the eye – their aetiology and treatment. *Br J Ophthalmol* 1983;67 : 191-4.

## The Effectiveness of Permethrin-impregnated Bed Nets for Malaria Control in Kg. Ganoh, an Orang Asli Area of Rompin District, Pahang

Sir,

Malaria is by far the most important insect-borne disease with 100 million persons being infected each year throughout the world as reported by the World Health Organisation<sup>1</sup>. In Malaysia, malaria is still a major public health problem especially among the

aboriginal population (Orang Asli). Control of malaria transmission by DDT house spraying, although successful in most other areas in the country, has experienced many problems in Orang Asli areas, particularly due to their poor acceptance of the spraying and their nomadic way of life.

The use of bed nets to prevent mosquito attack is perhaps one of the most widely practised form of mosquito bite deterrent. We feel that one possible alternative effective method for control of malaria among the Orang Asli is the use of permethrin-impregnated bed nets. An earlier study<sup>2</sup> have shown benefits in reducing the number of bites on humans sleeping within them, even if there are holes in the nets. This is due to the deterrent and excito-repellent effects and feeding inhibition of the insecticide.

Kg. Ganoh, a rural Orang Asli village in Rompin District, Pahang, with a population of 169 (all Orang Asli) was selected for an intervention "permethrin-impregnated bed nets" programme, because it is an endemic area for malaria. The objectives of the programme were to introduce permethrin-impregnated bed nets into all Orang Asli families and to evaluate the effectiveness of permethrin-treated bed nets. A total of 80 units of permethrin-treated bed nets (nylon type) were distributed to all families in February 1991. The mass impregnation of bed nets was done by the health staff from Pekan under the supervision of Pahang state entomologist. A mass blood survey for malaria parasites was carried out just before the launching of the project. The usage of nets was continuously monitored by health staff since then. Only one reimpregnation of the nets was done in February 1992.

Confirmed malaria cases prior to the intervention from January 1985 to February 1991 were compared with post-intervention case detection from March 1991 to December 1994. A total of 67 malaria cases reported prior to the intervention compared to only 3 cases after the intervention. When compared with the average pre-intervention number of cases per year, we observed a marked and significant reduction in the incidence of malaria cases after the intervention (11.2 cases/year before and 0.8 case/year after the intervention, ( $p < 0.01$ ). Regression analysis showed a significant difference

in the slopes of the regression lines for pre-intervention and post-intervention, ( $p < 0.05$ ).

Permethrin-impregnated nets give good personal protection against malaria by reducing exposure to mosquitoes, hence provide effective ways in preventing malaria-related mortality and morbidity<sup>1</sup>. Studies in Thailand showed that the residual effect of permethrin impregnation net lasted up to 16 months and therefore reimpregnation of the nets need to be done as infrequently as once a year<sup>3</sup>, as was not carried out in our project. Permethrin is readily acceptable insecticide because of protection to mosquito nets. It is odourless, non-greasy, non-staining and non-irritant. It repels insects and kills them on contact. It kills mosquitoes with safe low dosage (500mg/square meter)<sup>1</sup>.

This time-series, field (quasi) pre-experimental study revealed that permethrin-treated bed nets offer an effective method for controlling malaria in an Orang Asli area and such programmes can be extended to other parts where malaria control is problematic. Provision of permethrin-impregnated bed nets into the existing country's broad primary health care programmes can also be considered.

However, it is important to note that only one group of Orang Asli were in the study in which the intervention was carried out. It involved neither randomization nor the use of a comparison (control) group. It is possible that the decline in malaria incidence may have been due to natural decline or due to ecological changes or factors other than the intervention activity. Therefore we feel that controlled studies need to be done.

We wish to gratefully acknowledge our appreciations to the Director, Institute for Medical Research for his permission to publish this paper. We also wish to thank Dr Anwar Sulaiman, all vector staff, Pekan Health Office, and the Pahang State Orang Asli Department (JHEOA) for their kind cooperation and assistance in this project.

N M Amal, MPH\*, S Yussof, DRSH\*\*, \*Department of Community Medicine, Institute for Medical Research, 50588 Kuala Lumpur, \*\*Pekan Health Office, 26600 Pekan, Pahang

**References**

1. Bermejo A, Veeken H. Insecticide-impregnated bed nets for malaria control: a review of the field trials. *Bull WHO* 1992;70 : 293-6.
2. Lines JD, Myamba J, Curtis CF. Experimental hut trials of permethrin impregnated nets and curtains against malaria vectors in Tanzania. *Med Vet Entomol* 1987;1 : 37-51.
3. Ratanakul PK, Prasittisuk C. The effectiveness of permethrin-impregnated bed nets against malaria for migrant workers in eastern Thailand. *Am J Trop Med Hyg* 1992;47(3) : 305-9.