Use of Antimalarials in South Asia

*Dr. V.V. Kondrashin**

*Dr. K.M.A. Dixit***

During the last 10-15 years the development of resistance to insecticides among malaria vectors and considerable increase of the cost of insecticides have been instrumental in diminishing the role which they used to play under Malaria Eradication Programme. (MEP).

To counterbalance the problem, the attention of the national authorities was drawn towards wider use of antimalarials in their respective programmes which had been converted into Malaria Control Programmes (MCP) in earlier seventies. The wave of post-eradication malaria epidemics (17th Expert Committee Report on Malaria, 1979) rolled throughout the countries of South-Asia about same time, further promoted this interest. Moreover, there was reported a dangerous upward trend in incidence of *P. falciparum* malaria with high fatality rate.

The interrelationship between two principal antimalaria measures—detection and treatment of cases and malaria vector control—was discussed a great deal at XXII World Health Assembly and its resolution (WHA 22.39) strongly advocated the rational use of all possible and, what is more important readily available, methods of malaria control in antimalaria programmes. From this point of view, detection and treatment of malaria cases, very often may be the main and under certain circumstances the only method of malaria control, which country can afford.

The contemporary role and place of antimalarials in the national malaria programmes (NMP) of South Asian countries are determined by their general objective, which is

*WHO/SEARO, New Delhi

**Nepal, Ministry of Health

to prevent mortality caused by malaria and to reduce morbidity. The extent to which antimalarials are used in each programme may vary quite widely depending upon local epidemiological conditions, operation abilities of the programme, as well as on financial opportunities of each country. As regards to the selection of particular antimalaria drugs or the drug regimen to be applied it also depends upon prevailing epidemiological conditions in each country. In that respect few particular situations in South Asia may be encountered.

1. The territorial distribution of different malaria species is usually different also. In some areas *P. vivax* is prevalent, while in other areas *P. falciparum*.
2. In areas of *P. falciparum* predominance there are territories where resistant strains are prevailing.
3. In areas with predominance of resistant strains the level of *P. falciparum* resistance may be different and vary from R I to R III.
4. Areas, where development projects are situated, employing itinerant labour force.
5. Areas, where local population has deficiency of G-6 PD.

Though the types of antimalaria treatment adopted under contemporary MCP in South-Asia are the same as it used to be under MEP (presumptive treatment, radical treatment, mass drug administration), however, dosages and drug regimens are worked out in conformation with concrete epidemiological situation ascribed above. It should be also stressed that the spectrum of antimalarials used nowadays is broader compared with that under MEP. For example, in many instances for the purposes of presumptive treatment chloroquine, was replaced by amodiaquine, to which the development of resistance is somewhat slower compared with the former drug. In areas with reported resistant foci of malaria the combination of different types of drugs in use and not only for radical treatment, but for presumptive treatment as well (fancidar, metakelfine). different types of drugs are also used for presumptive treatment depending upon by which method, either by ACD or PCD, the cases were detected.

The choice of antimalarials and the regimen to be employed are also varying from place to place. In India, it is believed that total of 1200 mg of chloroquine (base) is sufficient to radically cure sensitive strains of *P. falciparum*, while in neighbouring Nepal for these purposes are used 1500 mg of chloroquine, and even until recently, imported cases from India were given upto 2400 mg of chloroquine.

Almost all countries in South-Asia switched over to 5-days course with primaquine for radical treatment of *P. vivax* malaria along with 1500 mg of chloroquine. Operational efficacy of this regimen appeared to be still satisfactory, at least in India and in Nepal (Roy et al, 1979 Kondrashin and Shakya 1981). There are, however, indications that in some areas of these countries (terai belt in Nepal and Rameswaram island in India) the relapse rate after administration of 5-day treatment has shown upward trend and it has increased from 5% - 8% upto 20% in 1983-1984. This, however, needs more detailed studies.

It appears that during the last decade the role of primaquine in MCP of South-Asia became much more important and epidemiologically significant, than it used to be during eradication era. This drug became necessary component not only for radical treatment of vivax malaria, but also for treatment of *P. falciparum* because of its gamontocidal potency especially in areas where *P. falciparum* developed resistance to antimalarials and local malaria vectors to insecticides.

Mass drug administration at present is applied predominantly in the project site areas, like road construction camps, irrigation, dam building, etc. and where large groups of itinerant labourers are gathered from different parts of the country, or even from neighbouring countries.

Single dose treatment is most popular regimen, consisting of 600 mg. of chloroquine (amodiaquine) plus 30-45 mg. of primaquine, for this purpose. This method is in common use practically in all countries of South Asia. Usually the drugs are given at least twice - on entering the project site and on leaving it.

Satisfactory epidemiological results were obtained while administering mass single dose treatment in combination with insecticide spraying in problem areas where residual spraying alone could not reduce malaria transmission to appreciable level (Kondrashin et al., 1981).

Due attention deserve the experience acquired during last few years in Nepal in using falcidax with primaquine as single dose treatment given to all suspected malaria cases returning back home from highly malarious areas of Assam, Nagaland, Meghalaya of India. The idea was to prevent the establishment of local transmission of *P. falciparum*, especially its resistant strains, imported to Nepal.

In 1975 there had been opened few malaria check-posts on Indo-Nepal eastern border.

of which most encouraging results were obtained at Kakarvita check-post in Jhapa district and where annually about one third of total imported cases from abroad in Nepal were detected. The successful performance at this check-post was through cooperation obtained by local authorities from immigration and custom offices. There are reasons to believe that a commendable job done at this check-post was to some extent responsible for prevention of local transmission of *P. falciparum* strains in Nepal so far.

Finally, there is a standing order in all countries of South Asia prohibiting the use of pyrethamine alone in order to prevent rapid development of resistance to this drug.

Administration on a large scale and rational use of antimalarials in MCP in the countries of South Asia have played an important role in containment of post-eradication malaria epidemics and especially in prevention of deaths due to malaria .

REFERENCES

1. WHO 17 Expert Committee Report on Malaria, 1979, Geneva pp. 172
2. S. Pattanayak, R. G. Roy, K. G. Samnotra *et al.* Indian J. Malariol. 1981, vol. 18, p. 21-27
3. A. P. Kondrashin and G. M. Shakya- J. Nep. Med. Assoc., 1981, 2, pp. 6-15