genotypes despite presence of more genotypes in the sample. Development of quantitative PCR is expected to resolve this paradox. Secondly it could be that, fever itself is known to have an antiparasitic effect that might result in elimination of several genotypes (strains) from the initial parasite pool. Lastly, there is a possibility that symptomatic children are more predisposed to such condition and may be more likely to be taking antimalarials more often thus eliminating a considerable number of genotypes (strains) from their parasite pool.

Presence of certain allele types (Mad20 or IC1) was found to be significantly predictive of development of clinical symptoms. This finding differ with previous observations where FC27 was associated with clinical symptoms in Papua New Guinea and in Uganda where Mad20 type has been recently associated with protection against clinical malaria. It appears that different studies in different locations are likely to associate different allele types with clinical symptoms possibly as result of variations in both parasite genotype composition and human host immunological experiences.

Contrary to our expectation, our attempt to investigate the effect of new alleles on clinical malaria outcome could not show any significant effect. Earlier studies in Senegal and Sudan showed that emergence of new alleles was associated with clinical malaria. There is a marked difference in the respective levels of transmission, and our study area has the highest level of transmission. With high endemicity, multiconal infections and cross-matings are prevalent. The two are known to be potential mechanisms for promotion of diversity, resulting from a high level of novel genotypes. It therefore appears that the rate of acquisition of new alleles in our study area was extremely high and not all of them resulted in clinical infections. This may have led us to obtain such an insignificant association in our analysis. However, this observation do not necessarily contradict the earlier conclusions made on the association between emergence of new alleles and clinical symptoms in Sudan and Senegal.

One of our observation with major epidemiological implications is that, in holoendemic areas, a single blood sample is unlikely to be a true representative of the parasite population(s) infecting an individual. The finding that all isolates examined in this study had multiple infections is unprecedented. All these observations have very important implications in terms of interpreting and understanding the dynamics of P. falciparum sub-populations.

SELF MEDICATION FOR MALARIA TREATMENT IN KOROGWE DISTRICT, NORTH-EASTERN TANZANIA

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Communities are not prohibited from seeking for malaria treatments from various sources they would prefer but are advised to comply with the standard treatment guidelines and this can be achieved by contacting a qualified provider. Enhancement of community compliance with medical treatment guidelines may retard or slow the currently increasing trend of parasite resistance to antimalarial drugs. Traditionally, sub-Saharan African communities have been contacting alternative providers for the treatment of malaria and other illnesses, as literature can evidence. Efforts have been underway to find out cost-effective and sustainable strategies for the treatment of malaria in Tanzania. Previous studies in Tanzania have found a substantial inadequate community compliance to standard prescriptions (Mnyika and Kilewo 1991; Mnyika et al. 1995; Ongore and Nyabola 1996). Poor compliance to drug use is reported to have a contribution to drug resistance (W.H.O 1996).

This article presents findings from a recent cross-sectional survey made in Korogwe district, Tanzania, to assess, among other things, the residents’ treatment seeking behaviour in relation to malaria.

A multistage random sampling approach was primarily used towards determining a sample of 30 villages, 451 heads of households, 442 exit patients or their caretakers/escorts and 50 health staff at private and public health facilities, 261 FGD participant village residents, 39 community leaders, 20 retail drug sellers, and 17 traditional healers, were covered in this study aspect. Data was collected using structured interviews to exit patients and heads of households and semistructured interviews to drug sellers at retail shops/ kiosks and pharmacies and key informant interviews with health staff and community leaders, indepth interviews with traditional healers and focus group discussion schedules.

It was found that self-medication using antimalarial drugs bought from retail commercial sources (sometimes without appropriate prescriptions) and local plant leaves or barks were used. Of the 20 respondents on what types of drugs that were frequently bought from their outlets, 90% mentioned chloroquine, 40% fensiidar, 30% metakeflin, 25% amodiaquine and 20% quinine. Quinine was reported by drug sellers found at retail pharmacies.
but not those found at ordinary shop/kiosk outlets. Individual respondents mentioned more than one type of drug to have been sold at their outlets. It was also found that 90% of antimalarial buyers from retail shops/ kiosks were children, who seemed to do so on behalf of their parents/caretakers who might have been busy with other domestic responsibilities. In response to whether antimalarial drug buyers from retail outlets show to drug sellers prescriptions from authorized practitioners, the following answers were obtained from the drug sellers interviewed: All of them (45%), a few of them (25%), most of them (20%). It was not known whether or not those who did not show appropriate medical prescriptions and those who sold such drugs were knowledgeable of the right doses of the drugs they bought. Report from a similar study in the neighboring (Same) District shows that 10% of the kiosk owners and shopkeepers, and 17% of the clients knew the right doses of chloroquine for children (Alioto et al. 1997). Answers from key informants and FGD participants showed that trees such as mwarobaini, mvugwa, mvumbasha, mkaari uss (eucalyptus tree) and fevi were relatively more frequently mentioned local plants to have traditionally been used in the treatment of malaria. Ignorantly, traditional healers were also contacted for severe malaria although it was associated with witchcraft. Also according to these informants, poverty contributed to delayed or low people’s contact of modern health facilities. However, some poor people ended up paying highly such as disposing chicken or chicken eggs to traditional healers for the reported severe illness such as those associated with malaria although the patients or their caretakers were unaware of this and instead they believed they have been bewitched by their enemies.

References

Acknowledgement
This study was funded by the USAID through the Abt Associates Inc. under the Partnerships for Health Reform Project.

THE RESPONSE OF PLASMODIUM FALCIPARUM TO CHLOROQUINE, AMODIAQUINE AND SULFADOXINE/PYRIMETHAMINE IN MUHEZA, NORTH-EASTERN TANZANIA

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ABSTRACT: A randomised clinical trial was conducted in Muheza district, Tanga, Tanzania to evaluate the efficacy of chloroquine (CQ), amodiaquine (AQ) and sulfadoxine/pyrimethamine (SP) in treating malaria. 118 children aged between 5 and 14 years who had uncomplicated falciparum malaria were randomised into 3 treatment groups. CQ and AQ were both given at a dosage equivalent to 25 mg base per kg of body weight, over 3 days. Dosage for SP was determined by calculating 25 mg of sulfadoxine per kg, and given as single doses. AQ attained a 100% clinical and parasitological clearance on days 3 and 7. A few of the patients on SP had persistent symptoms and a 95% parasite clearance during the first week of treatment. Over half of those on CQ had persistent symptoms, and 35% of them were still positive for malaria parasites during the first 7 days of treatment. On follow up through 28 days, CQ achieved a cure rate of only 25.6% in contrast to 67.6% and 83% scored by AQ and SP respectively. It seems CQ is no longer effective enough to deserve to continue being the first line drug for the treatment of malaria. AQ could be a better choice to replace CQ as the first line drug.

Introduction
Malaria is still the most important parasitic disease in the tropics and sub-tropics. It ranks high among the major causes of morbidity (WHO, 1990), particularly in young children and pregnant women (Mendis and Carter, 1994), causing death of between 1 and 3 million people in these two age groups in sub-Saharan Africa (Stuetzler, 1989). The disease is the leading cause for out-patient attendances, hospital admissions and hospital reported deaths in Tanzania. In practical terms, malaria control depends very much on proper case management. The emergence of resistant strains of Plasmodium falciparum to the first line drug, chloroquine (CQ), and to some degree lack of the second line and reserve drugs has seriously hampered the prospects of malaria control. For quite some time now CQ has been showing very dissatisfying response almost all over the world. This awkward situation has forced some countries to review their treatment policies. As a consequence, Malawi chose SP as the