Tropical Medicine and International Health doi:10.1111/j.1365-3156.2006.01725.x

VOLUME 11 NO 11 PP 1670–1678 NOVEMBER 2006

Community response to intermittent preventive treatment delivered to infants (IPTi) through the EPI system in Manhiça, Mozambique

Robert Pool[1,2], Khatia Munguambe[1,3], Eusebio Macete[3,4], Pedro Aide[3], Geraldina Juma[3], Pedro Alonso[2,3] and Clara Menendez[2,3]

1 *London School of Hygiene and Tropical Medicine, London, UK*
2 *Center for International Health, Hospital Clinic, Institut d'Investigacions Biomedicas August Pi i Sunyer (IDIBAPS), Barcelona University, Barcelona, Spain*
3 *Manhiça Health Research Center, Manhiça (CISM), Mozambique*
4 *National Directorate of Health, Maputo, Mozambique*

Summary

OBJECTIVE To describe attitudes to the expanded programme on immunization (EPI) and intermittent preventive treatment in infants (IPTi), and perceptions of the relationship between them. In particular, whether the introduction of IPTi negatively affects community attitudes to, or use of, EPI; or, conversely, whether and if so how, the concurrent delivery of IPTi and immunization influences perceptions of IPTi.
METHODS Anthropological study carried out in the context of a trial of IPTi with sulphadoxine–pyrimethamine delivered alongside routine EPI vaccinations. We used open in-depth interviews, semi-structured interviews and participant observation, conducted in both community and clinic settings.
RESULTS IPTi was generally acceptable, in spite of initial resistance. Perceived negative aspects of IPTi did not affect perceptions of EPI, and IPTi was not misinterpreted as immunization against malaria, leading to a reduction of other preventive measures or delay in treatment seeking. Initial resistance was related more to the trial than to IPTi *per se*, but both rejection and acceptance were embedded in a complex constellation of local and wider contextual factors.
CONCLUSIONS IPTi delivered together with EPI was generally accepted after initial rejection. The factors that led to this rejection were largely local and trial related, but they did resonate with much wider cultural themes (rumours about research and health interventions, gender inequality and health-related decision making). The prior acceptance and routine administration of EPI played a key role in the acceptance of IPTi in this community. However, more studies, in different social and cultural settings and using different drugs and regimens, are needed before generalizations can be made. Although trial settings are different from actual implementation, it is necessary to study acceptability before implementation in order to anticipate problems and design information campaigns to ensure maximum community acceptance.

keywords malaria, Mozambique, IPTi, EPI, acceptability, rumours

Introduction

Every year malaria causes at least 750 000 deaths in children under 5 years old in Africa. The highest mortality is in children under 12 months (Snow *et al.* 2005), and malaria is considered to be one of the principal barriers to further improvements in child survival in Africa (Young 1995; Lopez 2000; WHO 2005). In Mozambique, malaria is one of the leading causes of hospital attendance and mortality in children, and *Plasmodium falciparum* accounts for more than 90% of all malaria cases in Mozambique (Saute *et al.* 2002).

The efficacy and safety of malaria intermittent preventive treatment in infants (IPTi) has been shown in a randomized controlled trial in Tanzania. The provision of sulphadoxine–pyrimethamine (SP) alongside routine vaccinations delivered through the existing expanded programme of immunization (EPI) reduced the rate of clinical malaria by 59% and the rate of severe anaemia by 50% (Schellenberg *et al.* 2001). Another study in northern Tanzania on amodiaquine (which was not administered through the EPI scheme) confirmed that the intermittent preventive administration of an antimalarial reduced the risk of malaria in infants (Massaga *et al.*

2003). Another recently completed trial in Manhiça in southern Mozambique has shown that IPTi with SP administered at 3, 4 and 9 months of age alongside routine vaccinations reduced the incidence of clinical malaria in infants who received it by 22.2%, and also reduced the number of hospital admissions by about 19% (Macete *et al.* 2006).

Intermittent preventive treatment in infants delivered through the EPI system is a promising tool for malaria control: it targets a high-risk population (infants), it provides preventive measures through routine contacts with the already well-established EPI system; it is a simple intervention that could use readily available and affordable drugs; and it is potentially cost-effective. However, new preventive health interventions such as IPTi can only be considered effective if they are also socially and culturally acceptable, and if they do not affect adherence to other established public health measures. Barriers to acceptance may take the form of resistance by the receiving population, but they may also stem from the health sector itself (e.g. inadequate understanding of the intervention by health workers, poor communication between health workers and patients).

Although the acceptance of immunization and vaccination coverage (EPI) has increased worldwide (UNICEF 1990), this has been uneven (Desgrees du Lou & Pison 1994), and it cannot be assumed that this will continue to be the case as new measures (such as IPTi) are added. And even if new interventions are initially accepted, their success will depend on sustaining coverage over time (Streefland 1995). Moreover, it is important that new additions to EPI do not negatively influence people's attitudes to, and uptake of, EPI. It is therefore important that, parallel to efforts to develop and test the effectiveness of IPTi, studies are also carried out to identify and understand potential socio-cultural barriers to successful implementation.

In this paper, we report the results of an anthropological study of the socio-cultural aspects of the introduction of IPTi into a successfully functioning EPI. We describe the study community's attitudes to EPI, their response to the introduction of IPTi and their perceptions of the relationship between EPI and IPTi. We were particularly interested in whether the introduction of IPTi would negatively affect community attitudes to, or use of, EPI (e.g. whether perceived negative effects of IPTi would lead to a reduction in utilization of EPI); or, conversely, whether the concurrent delivery of IPTi and immunization would influence perceptions of IPTi (for example, whether IPTi would be misinterpreted as immunization against malaria, leading to a reduction of other preventive measures or delay in treatment seeking).

Setting and methods

The study was linked to a randomized, placebo-controlled, double blind trial of IPTi with SP, delivered alongside routine EPI vaccinations at the ages of 3, 4 and 9 months, and involving 1503 infants, recruited when attending clinics to receive their second DTP/hepatitis B and third polio immunizations (Macete *et al.* 2006). Both studies were conducted at the Manhiça Health Research Centre [Centro de Investigação em Saude da Manhiça (CISM)] in Manhiça District (Maputo Province), in southern Mozambique.

Manhiça District has a population of around 130 000. The town of Manhiça and the surrounding villages (a population of 36 000) is under continuous demographic surveillance carried out by CISM.

The anthropological study involved open in-depth interviews with 308 mothers/caretakers of infants, 266 of whom were participating in the IPTi trial, and 42 who had refused to be enrolled or who had dropped out in the early stages of the trial. The approach used in both sampling and analysis was that of Grounded Theory (Glaser & Strauss 1999). Data collection and interpretation was an iterative process, with ongoing interpretation guiding continued recruitment and development of interview topics. Sampling was by convenience: as many women as possible were recruited from among those attending the clinic and they were interviewed until a point of theoretical saturation was reached, i.e. until no additional data were being found that could either generate new interpretive categories or add further insights to existing ones. After the initial interview, fieldworkers paid less formal follow-up visits to the households of these participants. The number of visits per household varied from one to 10 (the extent of follow-up also depended on theoretical saturation and on practical circumstances). In total, 637 follow-up visits were recorded.

In order to collect broader contextual information relating to malaria, infant health and immunization, 153 interviews were conducted with child caretakers, community members and traditional healers focusing on traditional curative and preventive practices relating to infants. An additional 52 interviews took place with members of the study community who were not involved in the trial in any way in order to collect more general information about community health concerns. Participant observation was conducted in both community and clinic settings. The five fieldworkers involved in the study were recruited from and lived in the study communities, where they participated in everyday life – including clinic visits – as well as doing research. One of the interviewers, herself the mother of an infant, attended the clinic more frequently. Notes were

taken during participant observation and discussed during debriefing sessions. All interviews were tape recorded, transcribed and translated and the management and interpretation of these data were assisted through the use of NVIVO, a qualitative analysis software package.

The study protocol was approved by the National Mozambican Ethics Review Committee, the Hospital Clinic of Barcelona Ethics Review Committee, and the Science and Ethics Committee of the London School of Hygiene and Tropical Medicine. Informed consent was obtained from all participants prior to interviews.

Results

Knowledge of malaria and treatment seeking

People in the study area are generally familiar with malaria and its symptoms. It is referred to in the vernaculars (Ronga and Shangana) as *dzedzese*. Although some people differentiate between malaria and *dzedzese*, saying that malaria is a more severe form of *dzedzese*, the terms are usually used interchangeably. Malaria/*dzedzese* is perceived as common and a part of people's everyday lives. Participants in the study were generally aware that it is transmitted by mosquitoes and knew the various options for prevention, frequently mentioning the use of bednets, insecticide sprays, and the burning of coils and various other substances as means of prevention. Traditional treatments for malaria were considered ineffectual (none of the interviewed traditional healers claimed to be able to cure malaria) and there was a clear preference for the biomedical treatment of malaria, and febrile illnesses in general, especially in infants. This took the form of visits to a hospital or health centre, but also included self-medication with anti-malarials obtained from market vendors or from the informal consultation of health workers.

Perceptions of immunization

Women in the study were not generally familiar with the word 'immunization' (*immunização* in Portuguese). They did have understanding of the concept of immunization, however, through the local term *kuvikela*, which means 'to prevent, to avoid, to protect'. This term has a broad meaning, referring to avoiding or protecting against various kinds of negative outcome, from drafts in the house to mosquito and snake bites, or simply to avoiding misfortune generally, or attenuating its consequences. People also understand the idea of immunization through the traditional treatment (called *humba* or *xihlambetwana*) that is given to most infants to prevent locally defined illnesses. In the case of both *kuvikela* and vaccination, women are generally aware that it prevents – or reduces the incidence or severity – of disease, but they often do not know exactly which diseases are prevented or how it works:

> Q: When you take your child for vaccinations what do you want to prevent?
>
> A: Diseases.
>
> Q: Diseases? Do they tell you what diseases are prevented?
>
> A: No.
>
> Q: Do you not know which ones?
>
> A: I don't know. (20-year-old mother)

Rather, they have a vague and diffuse idea of prevention as something that is generally 'good' for infants. This did not appear to be diminished by the frequent mention of localized swelling and fever following vaccination. This acceptance of immunization in the context of the EPI – and the acceptance of other services such as antenatal care – is further strengthened by the widely held belief that they are compulsory. Women described vaccination as 'the law of the hospital,' and sometimes even as 'the law of the government'. This has contributed to general acceptance of these services, by both by mothers and other relatives, whatever their personal perceptions of the advantages and disadvantages:

> I was never absent, not even once. I comply. I have to comply, that's the law' (É essa a lei). (29-year-old mother)

Women also spoke in similar terms about traditional prevention practices for infants, saying that it was something that that they 'must' do, even though they were not sure exactly what it was that the treatment prevented:

> Q: What happens if a child does not take that *humba* medicine?
>
> A: I don't know, but every child must take it?

As a result of this combination of felt coercion and a vague sense of benefit (and no real perception of evidence to the contrary), together with perceived similarity between local prevention practices and biomedical vaccination, mothers (and the community in general) have accepted EPI and it has become routine to such an extent that they comply without conscious reflection: it has become part of 'local culture'.

Initial response to the IPTi trial

During the early stages of the IPTi trial there was serious community resistance to participation, and recruitment dropped to such an extent that the trial was jeopardized. There were a number of reasons for this. First, mothers became concerned by the way in which their infants were being measured when they were recruited into the trial. The measuring device was like a three-sided rectangular box that was said to resemble a coffin. Based on this, rumours developed that project staff were expecting children to die and were taking measurements for their coffins. Drinks and biscuits given to mothers while they were waiting were interpreted in a similar way, as an attempt to poison infants through their mother's milk:

> Some say that the (research) Centre was founded by White people. Once they failed to take our country, they decided to kill our children and our women through tablets and the tea which they give to our women in that small house, which they made at the hospital (the IPTi clinic). Afterwards they will rule alone. They also say that when they measure the weight and the height, it is for making the coffin of the child.

Second, and perhaps most importantly, there was dissatisfaction about the taking of blood. While many could understand the reasons for taking blood from a sick child to diagnose an illness, they were suspicious about taking it from one who is healthy:

> I have no words (against IPTi), but I complain when it comes to blood taking, because they take blood without the child being sick, and then that brings complications.

People were familiar with finger-prick blood being taken for diagnosing disease, but that was only a drop on a slide, whereas here more was being taken. Rumours rapidly developed about researchers drawing litres of blood, and these were soon linked to more general rumours, widespread throughout Sub-Saharan Africa, of medical researchers stealing blood and selling it in Europe (White 2000). Concerns were exacerbated by uncertainty about whether infants can produce new blood, especially given the perceived shortage of meat in the diet. Some mothers reported being puzzled by clinic staff telling them during one visit that their child 'did not have enough blood' (i.e. was anaemic) and then wanting to remove some of this scarce blood during the next visit:

> We already had examinations (of our infants) which hurt our hearts, because they come to take blood, and when the child gets sick, at the hospital, they tell you that the child doesn't have blood, while they always come to take blood. (30-year-old mother)

Rumours about blood stealing, poisoned biscuits and coffin measurements combined and soon there was a widespread view in the community that the clinic was planning to kill children.

Third, information about the study given to the community and to potential participants was interpreted as supporting the rumours. For example, people had been using SP as an antimalarial for years, and wondered why its safety was now suddenly being emphasized in the context of the trial. They wondered whether it was perhaps less safe than they had been led to believe. They also wondered why women had to go through a detailed consent procedure and sign forms in order for their child to receive IPTi, whereas they had never had to sign forms to take SP or to receive immunization in the past. The promise that they would receive compensation if their child died while participating in the study added to their suspicion, as did the necessity of follow-up visits, which suggested that the researchers expected something to go wrong.

Finally, in some areas that are strongholds of the opposition party, political activists associated IPTi with the ruling party because it was being implemented through a government clinic. This also affected recruitment and adherence.

Acceptance of IPTi

About 6 weeks into the trial there had been a substantial drop in recruitment. As soon as the extent of this became clear, a rapid ethnographic survey was made in the study communities in an attempt to identify the cause of the problems. As a result changes were made to the procedures and a focused information campaign was developed and deployed. In particular, the measuring device was altered so that it could no longer be seen as resembling a coffin, the provision of drinks and biscuits was stopped, and community meetings were held in which members of the clinic and research team explained the study in more details and answered questions and concerns in public. After this, the rumours rapidly subsided and recruitment picked up, reverting to normal about 3 months after the commencement of the trial. By the end of the trial IPTi was not only widely accepted, but seemed to have become a routine part of the EPI setup. There were a number of reasons for this rapid turn around resulting in general acceptance, and the information campaign was only one of these.

First, IPTi was closely associated with EPI, which was already well established. People often did not know precisely what the difference was between the two, and it

was easy to assume that as EPI was 'good for children' then IPTi must be good for them as well. Women sometimes continued to insist that immunization or IPTi was good even if their child fell sick:

> In spite of my child being sick, I can say that the tablets (IPTi) are good. They are good because the sons of other people are well, they got them and got well, and strong, and beautiful. My son is thin and this way he cannot be beautiful. He is always sick but I cannot say that it is caused by that tablet. (29-year-old mother)

This also resonated with similar ideas relating to traditional preventive treatment, which was also thought to be generally but unspecifically 'good' and 'what you were expected to do'. Moreover, because of the widespread belief that EPI was 'the law of the hospital,' many assumed that this also applied to IPTi, and that even if there were risks and rumours, compliance was not really a matter of choice anyway:

> People say that they want to kill our children, and whenever I arrived there to measure they used to say that it was a coffin. And many other people were also saying that they did not accept that their child could be given that treatment because it provokes diseases. There were many things being said, but we follow the law. (25-year-old mother)

Second, although most of those interviewed were aware that IPTi had something to do with preventing malaria, they also often thought that it prevented other, unspecified diseases as well, probably because of its association with EPI:

> I was told that this tablet prevents many diseases that might appear in the child, like malaria, coughs, everything. (24-year-old mother)

So if children still got malaria in spite of receiving IPTi, then this could still be interpreted positively by arguing that perhaps its severity had been attenuated, or other diseases had been prevented.

Third, people in the community, and especially mothers, generally trusted the clinic, partly because of past experience with EPI and antenatal care and partly because those who worked in the clinic were also often relatives, friends or neighbours. The relationship between mothers and the clinic was, however, ambivalent. While generally trusting the clinic and attending voluntarily, they were also acutely aware of being dependent, for vaccination, for antenatal care, and for illness, and there was a real worry among some of them that if they did not comply they may be treated differently if they needed help at some future date.

Fourth, the participants, and the study community generally, were already familiar with SP and perceived it as safe and effective against malaria, even though they did recognize some side effects (vomiting).

Fifth, in contrast to many parts of rural Africa, many mothers in the study area seemed to be able to make decisions about health care for their children relatively independently of husbands and in-laws. Most participants said that they did not need permission from husband or relatives to take their child to the clinic, and that they made such decisions independently. Most said that if they thought their child needed to be taken to the clinic, they would inform their husband, but would take the child anyway if he refused. Almost all the women who refused to enrol in the trial or who dropped out after enrolling were less independent and had yielded to their husband's or in-laws' opposition. These also tended to be younger women.

Finally, as the trial progressed, it became clear that the amount of blood being taken was relatively small and that children were not dying in droves after attending the clinic. Indeed, many women reported that their child had been sick less frequently since receiving IPTi, and some of those who had refused to enrol later expressed regret at not having done so.

Did IPTi affect attitudes to EPI?

Judging from the responses to questions in the in-depth interviews about perceptions of and adherence to EPI, the initial problems with acceptance of IPTi do not appear to have had any deleterious effect on people's attitudes towards the health facilities or their acceptance of EPI. Because EPI was already a well-established routine in the community, the association of IPTi with EPI tended to have a positive effect on perceptions of IPTi rather than a negative effect on the acceptance of EPI. Moreover, the initial negative response to IPTi did not last long enough to affect people's perceptions of EPI.

Also, although people did associate IPTi with EPI, they were generally aware that 'the tablets' (as they referred to IPTi) were somehow separate from EPI. For example, everyone knew that not all infants who received immunization as part of EPI also received IPTi. This distinction was clear from the spatial separation in the clinic (a separate area in the clinic was reserved for IPTi-related procedures) and from the additional procedures related to IPTi (informed consent).

As a result, participants were able, at least to some extent, to keep their opinions about EPI and IPTi

separate. This is clear from the fact that, even at the height of the rumours and the rejection of IPTi, mothers continued to adhere to routine immunisation. Women who did not want to enrol for the IPTi trial would go to the clinic, have their child weighed and vaccinated and then leave before staff had a chance to recruit them into the IPTi trial. Some women mentioned in the in-depth interviews that they went to clinics in neighbouring districts for immunization if they wanted to avoid IPTi.

Influence of IPTi on malaria prevention and treatment

We had initially thought that because IPTi was to be delivered as part of EPI, people might assume that it was a form of immunization against malaria. There was concern that as a result people would neglect other forms of prevention such as bednets, or that it might affect treatment-seeking behaviour for febrile illness in infants if people assumed that this could no longer be malaria. Data from the in-depth interviews suggest that this is not the case in this study population.

Although people tended to assume that IPTi was some form of 'immunization,' their loose interpretation of the concept of immunization meant that they did not expect IPTi to entirely prevent their infants from getting malaria. As a result, they even expected their children to continue to have malaria, albeit perhaps less frequently or less severely:

> Q: Can a child that has taken IPTi fall sick?
>
> A: Yes but the illness can't worsen as when the child hasn't taken anything. (18-year-old mother)

Mothers saw IPTi as something that would make the child more resistant to complications or death resulting from an episode of malaria. This idea of partial prevention was strengthened by the recall of information, given at enrolment into the trial, about IPTi being tested, and the advice that existing preventive measures should still be used:

> On the day I entered there they told me that it (IPTi) prevents malaria, but it does not mean that the child is not going to get sick again or not get fever; they are only preventing that disease of malaria. (30-year-old mother)
>
> They told me that those tablets (IPTi) were for prevention of diseases. It doesn't mean that he will not get sick, but when the disease attacks it is not going to dominate. (40-year-old mother)

Discussion

In the context of the trial in Manhiça, IPTi was generally acceptable in spite of initial resistance. Both rejection and acceptance were due to a combination of local and wider contextual factors. A loose interpretation of efficacy related to the local concept of *kuvikela* and vague notions of prevention/reduction/attenuation meant that people were used to illness occurring in spite of preventive measures, and the onset of illness in a child who had been vaccinated was not necessarily interpreted as meaning that the vaccination was ineffective. As a result, existing preventive behaviours (e.g. use of bed nets or local repellents) or treatment-seeking patterns for infants with febrile illness do not appear to have been negatively affected as a result of people mistaking IPTi for immunization and thinking their child had been vaccinated against malaria.

The main factors involved in the initial rejection were largely related to the clinical trial setting rather than to IPTi *per se*. The most important of these were the initial procedures used to measure the infants and the taking of blood (combined with a general lack of understanding about why blood was needed and how much was to be taken). This was then exacerbated by the emphasis on the safety of SP during the informed consent procedure. Participants appeared to be selective in their retention of information from the informed consent procedure: they were unclear about the procedures for taking blood, despite careful and repeated explanation, but were clear about the safety issues that had also been explained as part of the same process.

These trial-related factors resonated with wider underlying concerns relating to medical research and intervention more generally and were expressed through rumours, common throughout Sub-Saharan Africa, of blood stealing and the killing of children. Non-trial-related factors contributing to rejection included women's lack of negotiating power in the household and local political rivalry.

The initial turnaround from rejection to general acceptance was triggered by the information campaign and revised procedures. But the ease of general acceptance was grounded in existing factors such as routine acceptance of EPI, local interpretations of 'immunization,' general trust in the clinic, and familiarity with SP. Adherence was further supported by the relative independence of many of the mothers when making health-related decisions.

In this particular setting resistance was triggered by aspects of the research process. In the case of routine implementation these will be absent and it seems likely that, in similar circumstances, IPTi will be generally

accepted, and may even go relatively unnoticed as part of an already routinized system with which it resonates. However, it cannot be assumed that this will be the case without further studies of acceptability in different contexts, and with different drugs and regimens. Also, adherence that has become automatic (like taking a child for vaccination) may start to be questioned when a new intervention is introduced, especially if this is accompanied by media attention (Streefland *et al.* 1999). Although immunization is generally accepted, resistance and rejection in Africa (and elsewhere) is common (Brown *et al.* 1982; Bukenya & Freeman 1991; Eng *et al.* 1991; Vaughan 1991; Coreil *et al.* 1994; Desgrees du Lou & Pison 1994; Feldman-Savelsberg *et al.* 2000; Poltorak *et al.* 2005). It is therefore advisable that monitoring of acceptance of IPTi should be continued after introduction.

In this study, gender relations also played an important role in both adherence and rejection. Most mothers said they did not need permission (from husbands or in-laws) to take their child to the clinic, and that they made major health decisions regarding children themselves without consulting. They inform their husband, they said, but would take the child anyway if he refused. Those who refused to participate in the trial tended to be more dependent on husbands or other relatives when making such decisions, and many refused because the husband was opposed. This opposition was often based on the rumours about the trial. This suggests that including men in information campaigns and involving them in issues relating to infant health, even if minimally, might improve adherence and serve to dampen suspicion that leads to rumour.

The study also raised issues around informed consent. Women who did agree to participate in the trial, and who adhered to treatment, often did not completely understand what it was they were participating in. Similarly, adherence to traditional preventive practices was also based on incomplete understanding. This will be familiar to many who are involved in informed consent procedures relating to medical research, and it raises questions about how much participants need to understand in order to give 'informed' consent.

Conclusion

This study shows that IPTi delivered together with EPI may be easily accepted and become part of routine behaviour by local populations. Although the factors that led to suspicion or rejection in this study were largely local and trial related, they did resonate with much wider cultural themes that span many countries across Sub-Saharan Africa (e.g. rumours about research and health interventions, and more general ethical concerns about global inequality and the unequal distribution of resources on which these rumours are based). These concerns should be the subject of further research (Geissler & Pool 2006). The prior acceptance and routinization of EPI played a key role in the acceptance of IPTi in this community. However, it is difficult to generalize about the potential acceptability and routinization of IPTi in different social and cultural settings across Sub-Saharan Africa, using different drugs and regimens, and these variations need to be studied before generalizations can be made. Further research is also needed in order to develop acceptable ways of delivering IPTi in areas of low EPI coverage. Although trial settings are different from actual routine implementation, it is necessary to study acceptability before actual implementation in order to be able to anticipate problems and design information campaigns to ensure maximum community acceptance.

Acknowledgements

This study was funded by the Gates Malaria Partnership at the London School of Hygiene & Tropical Medicine. The related trial received financial support from the Banco de Bilbao, Vizcaya, Argentaria Foundation (grant no. BBVA 02-0) and the Bill and Melinda Gates Foundation (grant no. IPTi103-0). CISM receives core support from the Spanish Agency for International Cooperation (AECI). The authors would like to thank Susanna Hausmann-Muela for her contribution to the design of this study.

References

Brown J, Djogdom P, Murphy K *et al.* (1982) Identifying the reasons for low immunization coverage. A case study of Yaounde (United Republic of Cameroon). *Revue d'épidémiologie et de santé publique* **30**, 35–47.

Bukenya G & Freeman P (1991) Possible reasons for non-completion of immunization in an urban settlement of Papua New Guinea. *PNG Medical Journal* **34**, 22–25.

Coreil J, Augustin A, Halsey NA *et al.* (1994) Social and psychological costs of preventive child health services in Haiti. *Social Science and Medicine* **38**, 231–238.

Desgrees du Lou A & Pison G (1994) Barriers to universal child immunization in rural Senegal 5 years after the accelerated Expanded Programme on Immunization. *Bulletin of the World Health Organisation* **72**, 751–759.

Eng E, Naimoli J, Naimoli G *et al.* (1991) The acceptability of childhood immunization to Togolese mothers: a sociobehavioral perspective. *Health Education Quarterly* **18**, 97–110.

Feldman-Savelsberg P, Ndonko FT & Schmidt-Ehry B (2000) Sterilizing vaccines or the politics of the womb: retrospective study of rumour in Cameroon. *Medical Anthropology Quarterly* **14**, 159–179.

Geissler PW & Pool R (2006) Local concerns about medical research projects in sub-Saharan Africa – a critical voice in debates about medical research ethics. *Tropical Medicine and International Health* **11**, 975–982.

Glaser B & Strauss A (1999) *The Discovery of Grounded Theory*. Aldine, New York.

Lopez A (2000) Reducing child mortality. *Bulletin of the World Health Organisation* **78**, 1173–1178.

Macete E, Aide P, Aponte J *et al.* (2006) Intermittent preventive treatment for malaria control administered at the time of routine vaccinations in Mozambican infants: randomised placebo-controlled trial. *Journal of Infectious Diseases* **194**, 276–285.

Massaga J, Kitua A, Lemnge M *et al.* (2003) Effect of intermittent treatment with amodiaquine on anaemia and malarial fevers in infants in Tanzania: a randomised placebo-controlled trial. *Lancet* **361**, 1853–1860.

Poltorak M, Leach M, Fairhead J *et al.* (2005) 'MMR talk' and vaccination choices: an ethnographic study in Brighton. *Social Science & Medicine* **61**, 709–719.

Saute F, Menendez C, Mayor A *et al.* (2002) Malaria in pregnancy in rural Mozambique: the role of parity, submicroscopic and multiple *plasmodium falciparum* infections. *Tropical Medicine and International Health* **7**, 19–28.

Schellenberg D, Menendez C, Kahigwa E *et al.* (2001) Intermittent treatment for malaria and anaemia control at time of routine vaccinations in Tanzanian infants: a randomised placebo-controlled trial. *The Lancet* **357**, 1471–1477.

Snow RW, Guerra CA, Noor AM *et al.* (2005) The global distribution of clinical episodes of *Plasmodium falciparum* malaria. *Nature* **434**, 214–217.

Streefland PH (1995) Enhancing coverage and sustainability of vaccination programs: an explanatory framework with special reference to India. *Social Science & Medicine* **41**, 647–656.

Streefland PH, Chowdhury AMR & Ramos-Jimenez P (1999) Patterns of vaccination acceptance. *Social Science & Medicine* **49**, 1705–1716.

UNICEF (1990) *The State of the World's Children*. UNICEF, New York.

Vaughan M (1991) *Curing their Ills. Colonial Power and African Illness*. Polity Press, Oxford.

White L (2000) *Speaking with Vampires: Rumor and History in Colonial Africa*. University of California Press, Berkeley, CA.

WHO (2005) World Malaria Report 2005. Available at: http://rbm.who.int/wmr2005 (accessed December 2005).

Young M (1995) *Investing in Young Children*. Rep. 275. World Bank, Washington, DC.

Corresponding Author Robert Pool, Centre for International Health, Hospital Clinic, Barcelona, Spain. Tel.: +34 650 315 211; Fax: +34 93 227 9853; E-mail: robert.pool@lshtm.ac.uk

Réponse de la communauté au Traitement Préventif Intermittent chez les jeunes enfants sous le Programme d'Immunisation Etendu à Manhiça au Mozambique

OBJECTIFS Décrire les attitudes par rapport au Programme d'Immunisation Etendue (PIE) et au Traitement Préventif Intermittent (TPI) administrés aux jeunes enfants ainsi que les perceptions des rapports entre ces deux systèmes. Plus particulièrement, de savoir d'une part si l'introduction du TPI chez les jeunes enfants a affecté négativement les attitudes de la communauté face au PIE et à son utilisation et d'autre part si, et comment, la délivrance simultanée du TPI chez les jeunes enfants et l'immunisation influencent les perceptions sur le TPI.

MÉTHODES Une étude anthropologique a été menée dans le cadre d'un essai de TPI chez les jeunes enfants avec de la sulfadoxine-pyrimethamine administrée en même temps que des vaccinations sous PIE. Nous avons utilisé des interviews profondes et ouvertes, des interviews semi structurées et l'observation des participants, menées à la fois au niveau de la communauté et des cliniques.

RÉSULTATS Le TPI chez les jeunes enfants était généralement acceptable malgré une réticence préalable. Les aspects négatifs perçus sur le TPI chez les jeunes enfants n'ont pas affecté les perceptions sur le PIE et, le TPI chez les jeunes enfants n'a pas été mal interprété comme étant une immunisation contre la malaria, conduisant à une réduction des autres mesures de prévention ou à retarder le recours au traitement. La réticence initiale était plus liée à l'essai qu'au TPI chez les jeunes enfants, mais le rejet tout comme l'acceptation faisait partie d'une constellation complexe de facteurs locaux et de facteurs provenant d'un contexte plus large.

CONCLUSIONS Le TPI chez les jeunes enfants administré sous le PIE était généralement accepté après un rejet initial. Les facteurs liés à ce rejet étaient surtout locaux ou associés à l'essai clinique elle-même, mais ils étaient aussi en rapport avec des thèmes culturaux plus larges (rumeurs sur la recherche et les interventions de santé, inégalités sur les sexes et la prise de décision par rapport à la santé). L'acceptation et l'administration en routine préalables du PIE a joué un rôle clé pour l'acceptation du TPI chez les jeunes enfants dans la communauté étudiée. Cependant, des études supplémentaires dans différents niveaux sociaux et culturaux et avec d'autres médicaments et régimes sont nécessaires avant qu'une généralisation ne soit possible. Bien que les sites d'essai clinique soient différents des sites d'implémentation, il est nécessaire d'étudier l'acceptabilité avant l'implémentation afin d'anticiper les problèmes et de concevoir des campagnes d'information qui assurent au maximum l'acceptabilité de la communauté.

mots clés malaria, Mozambique, TPI chez les jeunes enfants, Programme Etendue d'immunisation, acceptabilité, rumeurs

Respuesta comunitaria al Tratamiento Preventivo Intermitente en lactantes (IPTi) a través del Programa Ampliado de Inmunizaciones (PAI) en Manhiça, Mozambique

OBJETIVO Describir las actitudes frente al PAI y al IPTi, y las percepciones sobre la relación entre ambos. En particular, si la introducción del IPTi afecta de forma negativa las actitudes comunitarias frente a o sobre el uso del PAI; o de forma contraria si la entrega simultánea del IPTi y las inmunizaciones tiene influencia sobre la percepción del IPTi.

MÉTODOS Estudio antropológico llevado a cabo dentro del contexto de un ensayo de IPTi con sulfadoxina-pirimetamina entregada junto con las vacunaciones rutinarias del PAI. Utilizamos entrevistas en profundidad, entrevistas semi-estructuradas y observación participativa, que fueron conducidas tanto en la comunidad como en el entorno de los centros sanitarios.

RESULTADOS En general el IPTi fue aceptado, a pesar de una resistencia inicial. Los aspectos negativos percibidos del IPTi no afectaron las percepciones del PAI, y el IPTi no fue mal interpretado como una inmunización frente a la malaria, que conllevase a una reducción de otras medidas preventivas o retrasase la búsqueda de tratamiento. La resistencia inicial estaba más relacionada con el ensayo clínico que con el IPTi en sí, pero tanto el rechazo como la aceptación estaban encajadas en un mundo complejo de factores tanto locales como de un contexto más amplio.

CONCLUSIONES El IPTi entregado con el PAI fue aceptado en general tras un rechazo inicial. Los factores que llevaron a dicho rechazo eran principalmente de carácter local y estaban relacionados con el ensayo clínico, aunque también resonaban con temas culturales más amplios (rumores sobre la investigación y las intervenciones en salud, inequidad de género y toma de decisiones relacionadas con la salud). La aceptación previa de la administración rutinaria del PAI jugó un papel clave en la aceptación del IPTi en esta comunidad. Sin embargo, antes de que se pueda generalizar, se requieren más estudios en diferentes contextos sociales y culturales así como utilizando otros medicamentos y regímenes. Aunque la disposición de los ensayos clínicos es diferente a la implementación real, es necesario estudiar la aceptabilidad antes de la implementación con el fin de anticiparse a los problemas y diseñar las campañas de información para asegurar la máxima aceptación comunitaria.

palabras clave malaria, Mozambique, IPTi, PAI, aceptabilidad, rumores