

children with grade I and II dengue was higher in this epidemic than in the previous epidemic. Epistaxis was the most common bleeding manifestation this time in contrast to haematemesis in previous epidemics.<sup>5,6</sup> Bleeding manifestations did not vary significantly, with platelet count ( $P > 0.05$ ). This may be explained by the fact that there are multiple factors involved in the pathogenesis of haemorrhagic manifestation during DHF, and thrombocytopenia is just one of them.<sup>8</sup> None of the patients developed manifestations of DSS. Neurological manifestations such as convulsions and encephalopathy were not noted in any patient. There was no mortality, which may be due to the fact that severe forms of DHF, such as DHF IV and DSS, were not included in the study. Further, mortality has been gradually decreasing over the years due to increased awareness, faster transport and better management protocols.

LFTs revealed an abnormal SGPT ( $>40$  IU/L) in 22 (64.7%) cases, compared to 84% in the study by Mohan *et al.*<sup>9</sup> and 63.6% in the 2001 Chennai epidemic.<sup>10</sup> Enzymes are usually raised after the third day. Alkaline phosphatase was raised in 35.4% cases and serum bilirubin of more than 1 mg% was seen in 8.8%.

There was no overt hyperbilirubinaemia in the majority of cases, but an alteration in enzymes was seen in a number of patients. This may have implications in the pathogenesis of haemorrhagic manifestations, as coagulation profiles may also be affected, and there may be variations in clinical profile. Hence liver enzymes must be monitored in all cases. Alterations in liver functions were not significantly influenced by platelet count, age and sex in the present study.

Initial haematocrit was low in a large number of cases due to the high prevalence of anaemia in the community.<sup>1,11</sup> However, evidence of plasma leakage (such as pleural effusion or ascites) or rising haematocrit was present in all cases. Similar findings were seen in a previous study from Delhi.<sup>5</sup>

We observed that the clinical features of DHF varied from the previous epidemic. Hepatic dysfunction with increased levels of serum enzymes was common in DHF. Bleeding manifestations and an alteration in biochemical profile are not significantly influenced by platelet count, age and sex of the patients.

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## Cabergoline for suppression of puerperal lactation in a prevention of mother-to-child HIV-transmission programme in rural Malawi

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**Summary** This study shows that cabergoline (single oral-dose) is an acceptable, safe and effective drug for suppressing puerperal lactation. It could be of operational benefit not only for artificial feeding, but also for weaning in those that breast-feed within preventive mother-to-child HIV transmission programmes in resource-limited settings.

## Introduction

During the initiation of a prevention of mother-to-child transmission of HIV (PMTCT) in Thyolo district of rural Malawi (where both exclusive breast and artificial feeding are available as infant feeding options) group discussions were held with mothers and village elders, and a key issue of concern was ‘how breast milk suppression would be achieved in those who chose the artificial feeding option?’. We were made to understand that engorged and dripping breasts were social taboos as it is believed to induce future illnesses in the mother and child. Mothers seen with such breasts

thus run the risk of being compelled by household members to allow the newborn to suck on the breasts. This practice constitutes a potential risk due to mixed feeding among those who choose artificial feeding but have delays in breast milk suppression in the early post-natal period.

Although current Malawi and World Health Organization guidelines recommend minimal breast compression for suppressing physiological lactation, we felt this strategy would be inappropriate in our setting and that mothers needed a more effective and rapid alternative.<sup>1,2</sup>

In the industrialized world, the drug cabergoline, administered in a single oral-dose is used for inhibiting physiological lactation.<sup>3,4</sup> The drug is a prolactin inhibitor and acts by stopping the brain from making and releasing the hormone 'prolactin' from the pituitary gland. When used immediately after delivery it prevents the 'onset' of normal lactation. There are, however, no published reports on the use of this drug among mothers in Africa.

We report on the acceptability, effectiveness and safety of cabergoline for routine lactational suppression in rural Malawi.

## Methods

This study was conducted in Thyolo, a rural area of southern Malawi with approximately 550,000 inhabitants. The study was conducted over an eight-week period in early 2004 and included consecutive HIV-positive mothers who opted for the breast feeding option. The main public hospital (Thyolo Hospital) was the site of the study and the procedures and steps for PMTCT in this hospital have been described previously.<sup>5</sup>

For mothers choosing the artificial feeding option, cabergoline was offered in a single oral-dose of 1 mg to be taken in the delivery room. Contraindications included a history of hypersensitivity to ergot alkaloids or bromocriptine, toxemia of pregnancy and essential hypertension. Side-effects were monitored clinically and mothers were interviewed and examined on day 1, 2 and 3 post-partum. Specific symptoms sought for included nausea, vomiting, epigastric pain, breast pain, dizziness, palpitations and visual defects. The pulse rate, blood pressure and vision were examined.

The PMTCT register and an additional pre-tested questionnaire were used to gather information related to the study. Data was analysed using epiinfo 6.4 (Centers for Disease Control, Atlanta, USA). Ethical approval was received from the ethical review boards of both the Ministry of Health of Malawi and Medecins Sans Frontieres.

## Results

A total of 104 HIV-positive mothers received cabergoline of whom six declined to participate in the study as they preferred to leave the hospital the day after delivery. Of the 98 mothers (median age 26 years) for whom data is available, the great majority (90%) came from villages. Median parity was 4 (range 1–8), 90% were married and the average educational level was 3.9 years in school.

Table 1 summarizes the findings related to acceptability and effectiveness. Four (4%) mothers experienced minor side-effects: of these, two (2%) complained of dizziness after administration and two (2%) experienced epigastric pain, both of which cleared before discharge on the third day after delivery.

**Table 1** Acceptability of cabergoline among mothers opting for artificial feeding in a preventive mother-to-child HIV transmission (PMTCT) programme in Thyolo, Malawi

Variable	Number (%)
Mothers interviewed	98
Heard about cabergoline prior to interview	98 (100)
Source of information (cabergoline)	
Antenatal services at hospital	69 (70)
Maternity room	8 (8)
Mothers in the community	1 (1)
Health centre	1 (1)
Combined (more than one of the above)	9 (20)
Maximum time required for breast milk suppression (days)	1 (range 0–1)
Mothers considering cabergoline effective	98 (100)
Had past experience with 'other methods' of breast milk suppression	31 (32)
Traditional medicine	26 (23)
Breast compression	1 (1)
Both	4 (4)
Preferred choice among 'other methods' if cabergoline was not available (n=31)	
Traditional medicine	23 (74)
Breast compression	2 (6.5)
Both	1 (3)
Don't know	5 (16)
Preferred choice for next pregnancy if all methods were available (n=31)	
Cabergoline	31 (100)
Others	0
What would be your infant feeding choice if cabergoline was not available?	
Artificial feeding	89 (91)
Breast feeding	9 (9)
Why would you choose artificial feeding if cabergoline was not available? (n=89)	
Because I want to reduce the chance of infecting my baby with HIV	82 (93)
Because I reduce the chance of infecting my baby and I get free milk.	7 (7)
Why would you choose breast feeding if cabergoline was not available? (n=9)	
Because I might end up with mixed feeding due to social pressure (as a result of engorged breasts)	6 (67)
Because I do not know of any other method to suppress breast milk	3 (33)
Mothers who would like cabergoline to be available in PMTCT routinely	98 (100)

## Discussion

This study shows that a single oral-dose of cabergoline is safe, effective and highly acceptable for suppressing puerperal lactation. This is one of the first reports on the use of cabergoline in sub-Saharan Africa. When compared to minimal breast compression there are a number of potential operational advantages of using this drug.

First, transmission of the HIV virus through breast feeding accounts for one-third to one-half of all mother-to-child HIV transmission (MTCT) – this risk remains unaffected by peri-partum antiretroviral drug prophylaxis.<sup>6</sup> In settings where exclusive artificial feeding is feasible and safe, administration of this drug in the maternity is safe and easy (single oral-dose) and results in rapid suppression of lactation. This intervention, unlike breast compression<sup>1</sup> which can take as long as three to seven days, is not associated with painful breast engorgements or added health risks on breast health and, because it is so convenient, is clearly more 'mother friendly'.

Second, the cumulative probability of the child acquiring HIV is related to episodes of mixed feeding and breast health problems, particularly mastitis.<sup>6,7</sup> As suppression of puerperal lactation with cabergoline is relatively abrupt, the

potential risk for mixed feeding – particularly mastitis (associated with engorged breasts) – is avoided.

Third, in settings such as ours, where social taboos linked to engorged and dripping breasts may be of concern, the use of a rapid and effective option for breast milk suppression is likely to minimize the social pressure on mothers and facilitate empowerment.

Finally, the drug is likely to be useful for ‘weaning’ among those who opt for exclusive breast feeding, as transition from breast milk to other feeds can often be relatively abrupt. A dried-up breast will avoid the possibility of feeding with breast milk and other feeds for greater than one day, and this might favourably impact upon HIV-transmission.

About one in three mothers in our setting were aware of other methods of breast milk suppression, namely traditional medicine or breast compression. Although breast compression is recommended for suppression of lactation in resource-limited settings,<sup>1,2</sup> this method had low acceptability, and, in the absence of cabergoline, the great majority of mothers would have resorted to using traditional medicine.

In resource-limited countries such as Malawi, the focus of preventive MTCT has so far been on limiting the risk of MTCT transmission around the time of delivery. However there is a need to minimize the substantial HIV- transmission that is still occurring through breast feeding. Cabergoline is an acceptable, safe and effective drug that could be of significant operational benefit in PMTCT programmes.

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## Myths and fallacies about epilepsy among residents of a Karachi slum area

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**SUMMARY** Misconceptions about epilepsy may explain the considerable stigma accompanying it. We aimed to identify such fallacies through questionnaire-based interviews of 487 adult residents of a slum area in Karachi, Pakistan. Of those interviewed, 25% believed that epilepsy was caused by evil spirits, black magic and envy by others – those without a school education were more likely to hold these views ( $P < 0.05$ ). Perceived complications included impotence and cancer. Shoe-sniffing was considered a treatment modality by 13%. It appears that misconceptions abound regarding epilepsy's causes, complications and methods of treatment. However, those who had received a school education were less likely to link epilepsy with supernatural phenomena.

### Introduction

Epilepsy is one of the most common neurological illnesses.<sup>1</sup> Epileptics comprise 1% of the Pakistani population and most sufferers are under 19 years old.<sup>2</sup>

Negative attitudes toward epilepsy are prevalent across the globe. Often the social stigma associated with epilepsy becomes a greater handicap than the associated seizures or the side-effects of medication.<sup>3,4</sup>

Negative attitudes arise from misconceptions and lack of knowledge about the illness. A study by Qidwai *et al.*<sup>5</sup> assessed the prevalence of myths and fallacies regarding various health issues among patients visiting a family medical centre in Pakistan. Only two questions were asked about epilepsy: 13% believed that evil spirits could cause epilepsy, while 73% thought that psychological stress could do so. No other study assessing the misconceptions regarding this illness in Pakistan has been published. Identification of local misconceptions is important in order to increase awareness and improve attitudes towards epilepsy. Our study examines the various myths and fallacies regarding epilepsy among residents of a Karachi slum area.