Rational Therapy

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Malaria in pregnant women: action for survival

In Thailand’s Prapokklao Regional Hospital, improved care and monitoring have led to the prevention of death among pregnant women with malaria. The methods used to combat the disease and its principal complications are outlined below.

The control of malaria is becoming more difficult because of resistance of the malaria parasite to chloroquine and of the vectors to insecticides. Furthermore, many people are careless about protecting themselves.

It is well known that the susceptibility of women to malaria infection rises during pregnancy, and that primigravidae are more vulnerable than multigravidae. Malaria and its treatment can cause serious complications in pregnant women and fetuses.

During the early 1980s a study in eastern Thailand indicated that miscarriage was almost four times more frequent in women with malaria than in those unaffected by the disease. Malaria was one of the most common causes of maternal death.

At the Prapokklao Regional Hospital, pregnant women with malaria were admitted to both the obstetric and medical wards. Almost all patients with severe or cerebral malaria died; associated hypoglycaemia, pulmonary oedema, renal failure and liver failure commonly went unrecognized until it was too late. Major improvements in the management of malaria were clearly necessary.

Progress in training, admission policy and care

It was felt that well-trained obstetricians and midwives should be better able to detect early signs or symptoms of malaria in pregnant women and fetuses than internists and intensive care unit nurses. For this reason it was decided to admit all pregnant women with malaria to the obstetrics department as from 1981, where they were cared for by specially trained midwives under the supervision of obstetricians.
internists and paediatricians. Proper records were maintained and the staff looking after the patients were taught about the morbidity of the disease and the complications associated with treatment.

All pregnant women with malaria were regarded as high-risk cases. Low platelet counts were obtained in some 80% of cases, and anaemia occurred in 97% of cases. Many cases involved parasitaemia, bilirubinaemia, and/or oliguria.

**Management of malaria and major complications**

Before 1981 all malaria cases were treated with quinine hydrochloride in a 500 ml 5% dextrose drip for eight hours. Hypoglycaemia and pulmonary oedema were not recognized, and consequently a high number of deaths occurred. As from 1981 a loading dose of quinine hydrochloride was given intravenously at 20 mg/kg diluted in 250 ml 5% dextrose in four hours, and then doses of 10 mg/kg were given at intervals of eight hours with the same dilution and rate until the patients were able to take the drug orally; 600 mg quinine sulfate was then given orally at eight-hourly intervals for seven days, except in two cases in which the treatment had to be continued for eight and ten days respectively. Special attention was given to the recognition of hypoglycaemia, pulmonary oedema, liver failure and renal failure.

With regard to liver failure, blood bilirubin levels were monitored on admission and two and five days subsequently; the eyes and skin were examined for jaundice. If a patient became jaundiced or bilirubin levels were still high on the second day, bilirubin monitoring was repeated on the third and fourth days following admission. If the level rose, the dose of quinine was reduced by a third until signs of improvement were observed, when the original dose was restored.

Renal function tests were performed on admission and on the second and fifth days subsequently. Urinary output was recorded hourly and central venous pressure was monitored. A diuretic was given if the urine output was less than 30 ml per hour and the central venous pressure was normal.

Pulmonary oedema being one of the most common causes of death, early detection was considered very important. Fluid intake and output monitoring was necessary and patients were maintained in a propped-up position. The measurement of central venous pressure was very important in severe cases. Fluid was restricted by maintaining the central venous pressure at 10–12 mm H₂O and urine output at not less than 30 ml per hour. Thus patients were kept dehydrated and reasonable renal function was obtained. The propped-up position helped to reduce mortality from renal failure and pulmonary oedema.

**Blood sugar levels were checked on admission, at hourly intervals while quinine was being given intravenously, and then every four hours while the drug was being taken orally.**

Hypoglycaemia is the most common complication of quinine treatment in pregnant women. Blood sugar levels were therefore checked on admission, at hourly intervals while quinine was being given
intravenously, and then every four hours while the drug was being taken orally. If there were signs of hypoglycaemia, namely deterioration of consciousness, blood sugar levels below 60 mg/dl, or convulsions during treatment, then 100 ml of 50% glucose was given. Patients who could drink were encouraged to take as much glucose syrup as possible during quinine treatment.

The overall maternal mortality rate in the obstetrics department fell from 341 per 100 000 live births to 54 per 100 000 within five years, partly because of the improved care of pregnant women with malaria. Whereas in 1981 there were eight deaths among 379 pregnant women with the disease, in 1986 there were no deaths among 299 such cases.

Women think of themselves last!

Importantly, while levels of progress and modernization vary, the countries of the South-East Asia Region continue to share an age-old Asian cultural ambience in which the young defer to the old and the female to the male. From this emanates an Asian trait well noted, especially in certain countries of the Region: a strong cultural preference for the male who carries forward the family lineage.

In this setting the girl child and young woman are among those furthest from positions of power. Women are, accordingly, effectively socialized to think of themselves last and as least. Unfortunately this spirit of selflessness becomes a primary source of inequity leading to a differential receipt of benefits. In education, labour force participation, health care and civic life, women face special barriers. The results of such gender differences are eventually inimical to women’s health and life chances.

– Women, health and development in the South-East Asia Region. New Delhi, World Health Organization Regional Office for South-East Asia, 1992 (SEARO Regional Health Papers, No. 22), p.10.