ANTE-NATAL

Maternal and Child Health

Pune, India

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1) ***What are the prevalent paediatric nutritional deficiencies seen in India compared to the UK? What public health interventions are in place to prevent and treat them in India?***

Vitamin A deficiency is the leading cause of childhood blindness in India and requires prevention, early recognition and prompt treatment. Prevention consists of educating parents to provide children with adequate sources of Vitamin A and by treating predisposing factors including diarrhoeal illness and respiratory tract infections. The National Institute of nutrition have set up schemes throughout India to provide Vitamin A prophylaxis. Unfortunately, coverage of these schemes tends to be poor, with only 2/10 children aged one to three, born to illiterate mothers, receiving Vitamin A supplementation according to the recommendation, coverage has also been poor among educated mothers[1]. Vitamin A deficiency is extremely rare in the UK, this is due to supplementation of formula milk and fortification of other foods [2].

Rickets is common in India and requires vitamin D and calcium supplementation. Children from lower socioeconomic backgrounds are less likely to receive adequate dietary Vitamin D and are also less likely to receive supplements. Preventative measures include educating parents to expose their children to the sun and give episodic vitamin D prophylaxis. Prolonged exclusive breastfeeding predisposes to Vitamin D deficiency and may be a problem for some parts of Indian society. In the UK, bottle fed babies receive adequate Vitamin D through fortification of milk, whilst breastfed babies may require supplementation. It is much more common for Asian infants to be anaemic and Vitamin D deficient in the UK compared with the Caucasian population, this may be a result of a mixture of cultural and dietary differences[3]. Bottle-fed infants in the UK don't usually require supplements as the formulas have been designed to meet all nutritional requirements [3].

Iron deficiency anaemia is prevalent among Indian children and largely results from the Indian vegetarian diet. The complications of iron deficiency include increased morbidity secondary to infectious disease, impaired cognitive function and delayed motor development. Education plays a large role in prevention. Mothers needs to be taught how to increase dietary iron intake. The poorest sectors of society seem to suffer the most, through lack of education and inadequate income to buy iron rich foods alongside a lack of access to iron supplements. The prevalence of iron deficiency anaemia is much lower in the UK with approximately 12% of 2 year olds being iron deficient[3].

Iodine deficiency is commonly in India compared with the UK. Iodized salt is one prevention strategy used in India [1].

Protein-calorie malnutrition is a widespread problem in India. 43% of Indian children under five years are underweight and 48% (i.e. 61 million children) suffer stunted growth caused by chronic malnutrition. Narrow birth intervals are linked with malnutrition, this is far more common among uneducated mothers, who often are malnourished themselves [3]. World aid schemes aim to educate mothers on weaning and dietary practices. Exclusive breast feeding for the 1st 6months is encouraged. Weaning is recommended from 6months and children should eat a full Indian diet by one year, complementary breastfeeding is acceptable until two

years. However, feeding practices remain far from desirable with only 23.3% of children aged 6-9months, born to uneducated mothers in Maharashtra, feeding according to the recommendations [1]. Weaning from breast milk to a protein deficient diet can lead to Kwashiorkor, which causes death as children thensuccumb to infectious disease. Undernutrition is relatively rare in the UK, paradoxically childhood obesity is becoming epidemic [3].

2) What antenatal services are available to Indian women? How do these differ to those in the UK?

Antenatal services are largely variable within Pune and are dependent on the socioeconomic status. Free services at government hospitals are available to the poorest sectors of society. Women are generally encouraged to give birth in the hospital setting. The tradition of home births is slowly dying out among women in urbanised parts of Pune. This is helping to reduce the infant and maternal mortality rates. Home births are still common among uneducated women and midwives are available for these deliveries.

Pregnant women in India are offered free HIV testing and pre-test counseling. In India, HIV testing in pregnancy is portrayed as mandatory to uneducated mothers, this ensures most women attending antenatal clinics are screened for HIV. The UK has an opt out system for these services. In India, a limited number of antenatal clinics are available in rural villages to provide ultrasound scans. Women who require caesarean section in the government setting can undergo their surgery free of charge, however, may have to pay a small fee for medications.

58% of pregnant women in India are iron deficient.[1]. Correction is required early during pregnancy to prevent maternal mortality. Indian women are commonly given iron, calcium, protein and vitamin supplements during pregnancy. However, only 30.5% of pregnant women in Maharashtra were found to take adequate iron and folate supplements, with disparity among the uneducated group[1].

In India, the law enforces of no sex determination during antenatal care. The laws were put into place to combat the infanticide of females, due to cultural preference of male gender, leading to disparity in the proportion of males to females in India. In the UK, the sex of a fetus can legally be determined, whilst sex selection in is not permitted.

Private hospitals charge fees for their services, women are offered an additional ultrasound scan at 6weeks as compared with the UK, to rule out ectopic pregnancy. Following this, serial scans are carried out in a similar manner to that in the UK. The tests incorporate a nuchal scan, anomaly scan and monitoring of fetal growth.

In terms of analgesia during labour, government hospitals in India rarely offer gas and air or epidurals, which are both commonly used in the UK. Cost effectiveness is important in these settings. Episiotomy is performed in almost all cases of vaginal delivery in India, whilst being much less common in the England, with only 12% of women receiving them [4]. Post

partum, women stay in hospital for longer in India compared with the UK, where healthy mothers and babies are routinely discharged 6hours post delivery.

Indian women are encouraged to have small families and take precautions to prevent further pregnancy. In the rural setting, tubectomies are commonly performed, 3days post partum as a post partum service.

3) ***Infectious disease is a common cause of paediatric mortality in India. What strategies have the Indian government put into place to combat this problem?***

The main form of infection control in India is through the childhood vaccination programme, which is strikingly similar to the UK. The vast majority of childhood vaccinations are funded by the Indian government. The BCG and hepatitis B vaccines are routine at birth in India, whilst only given to newborns from high risk areas in the UK. Some vaccinations in India are optional and come at a cost; these include Hib, meningitis, Hepatitis A and chickenpox. Therefore, these diseases are likely to spread throughout poorer communities. India has not been able to eradicate polio and leprosy.

Rabies is a large problem in India, as dog bites are extremely common. Treatment for rabies is readily accessible throughout India.

Contaminated water and food sources are a widespread problem in India. They lead to dehydration secondary to diarrhoeal illness, which is the biggest cause of childhood mortality in India. Antibiotics are commonly given to children with gastroenteritis in India as compared with the UK, where self limiting viral gastroenteritis is more frequently seen. Preventing deaths related to diarrhoeal illness in India involves teaching parents when to seek medical advice. Mothers from rural villages are often taught how to make oral rehydration solution, as access to care may be scarce or timely. Water in India must be chlorinated and further boiled to help prevent diarrhoeal illness. Educating mothers about hand washing and food hygiene are simple but effective techniques in reducing diarrhoeal illness. The Indian government and various charitable organisations are attempting to improve poor sanitation by making it compulsory to build toileting facilities in rural villages. However, these strategies alongside education programmes have been challenging, due to poor literacy rates within these communities.

HIV and Tuberculosis treatment programmes have been set up by international charities and provide free accessible medication. Direct observation therapy (DOTS) is being carried out to reduce the development of drug resistance and ensure good compliance, particularly in those who are uneducated or illiterate. BCG vaccination at birth has also helped to reduce the incidence of TB. Education programmes at rural sites aim to prevent spread of these diseases. Access to medication to prevent mother to child transmission of HIV is becoming more accessible. Despite the risks, breastfeeding is still recommended in HIV positive mothers in India, due to the social stigma of not breastfeeding.

Malaria and dengue fever are common differential diagnosis of children with fever of unknown origin in India. Prevention of these diseases is through education of avoiding mosquito bites.

4) ***Describe an interesting case you have encountered. What impact did it have on you?***

An interesting case I have seen in India was that of a child with ambiguous genitalia. In Indian culture as with most cultures, not knowing the sex of a child is a cultural taboo. In the UK, infants with this condition are often assigned female gender as it is easier to perform surgery to achieve good phenotypic outcomes. However, in Indian culture, male infants are more sought after, so parents are often happier to assign male gender to these infants. Sadly in this case the child's family would have preferred the child to have died rather than live with the "shame" and social stigma of having a child with undetermined gender. Hearing about this case made me question the value of child's life in India. I have encountered many paediatric cases of congenital anomalies and have found it difficult to adjust to the system where people who cannot afford treatment for their children with such conditions are not treated; however, I can understand that limited resources often leave no choice in such circumstances.

References

1) National Family Healthy Survey 2005-2006
2) http://health.holplus.com/Health/Nutrition/Vitamin-A-Deficiency-Prevention-and-Treatment.html
3) http://www.ifm.net/industry/undernutrition.htm
4) Oxford handbook of clinical medicine 7th edition

Picture Reference

http://www.unicef.org/india/nutrition.html