was 12.6 weeks and at counselling 15.3 weeks. Three out of four further couples referred to the specialist centre had prenatal diagnosis (at 11, 11.3, and 17.3 weeks). No fetus was diagnosed as affected, but one pregnancy miscarried. One woman declined prenatal testing because of a poor obstetric history, and she later miscarried. Two out of 17 liveborn children had a sickle cell disorder. Overall, 1 in 10 affected pregnancies was detected prenatally and terminated.

Comment

The use of prenatal diagnosis for sickle cell disorders observed here (5/37, 13.5%) is typical for London, so the data are representative though the numbers are small.³ Antenatal screening as presently practised does not meet patients' needs for early information and counselling. Instead it leads to late recognition of risk in both the index and subsequent pregnancies and a correspondingly low uptake of prenatal testing.² Only the two couples whose general practitioner referred them directly to the specialist centre had assured access to first trimester diagnosis.

Primary care teams could improve services by referring women (or couples) known to be at risk for

counselling as soon as pregnancy is reported, simultaneously screening both partners when a woman in a risk group reports a pregnancy, and opportunistically offering screening before a woman becomes pregnant.⁴ We plan to issue couples at risk with a card that emphasises the importance of early counselling in pregnancy and to build a routine audit of the screening process into counselling records.

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Drug points

Intranasal chlorhexidine resulting in anaphylactic circulatory arrest

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Acute anaphylaxis due to chlorhexidine has been reported, especially in Japan.¹⁻⁴ Most of the cases have presented with cutaneous eruptions, bronchospasm, tachycardia, and mild hypotension. We report a case of prolonged circulatory arrest that was subsequently proved to be an acute anaphylactic reaction to intranasal chlorhexidine.

A 53 year old man with acromegaly was admitted for transsphenoidal resection of a pituitary adenoma. He was otherwise healthy and gave no history of drug allergy. Anaesthesia was initially uneventful. His nasal mucosa were cleaned with an aqueous solution of chlorhexidine gluconate 0.05%. Shortly after the nasal incision his blood pressure fell to 30/15 mm Hg with a heart rate of 70 beats per minute. One litre of 0.9% saline was infused rapidly, with ephedrine 20 mg and then adrenaline 0.5 mg being given intravenously. This failed to restore his blood pressure, and his systolic pressure fell to below 20 mm Hg. The operation was abandoned and cardiac massage started. Over the next 20 minutes he required a further 3 mg of adrenaline, as well as three direct current shocks for persistent ventricular fibrillation. A total of 1.5 l of 0.9% saline and 1 l of colloid solution were infused during this initial resuscitation period. He was transferred to intensive care being given an adrenaline infusion, the tube being removed 20 hours later.

At no stage was there any evidence of bronchospasm, erythema, or oedema. He suffered no neurological or cardiac damage. He remembered that a red blotchy skin rash had appeared on his face after chlorhexidine 1% dental gel had been applied to his gums during a visit to a

dental hygienist in the previous year. Allergy testing was therefore arranged. Skin prick testing to chlorhexidine gave a strongly positive result at 500 µg/ml, and a leucocyte histamine release test was strongly positive for chlorhexidine. All the other agents used during anaesthesia gave negative results.

The Committee on Safety of Medicines received 182 reported reactions to products containing chlorhexidine from 1965 to 1996 (personal communication). Most of these were cutaneous or mucosal eruptions. The committee has received only one previous report of acute circulatory failure. In Japan between 1967 and 1989 there were 15 reported cases of anaphylactic shock related to chlorhexidine, of which 13 cases followed application of the drug to mucous membranes. In 1984 the Japanese ministry of welfare recommended that the use of chlorhexidine on mucous membranes be prohibited.³ The medical data sheet for the solution of chlorhexidine used in this case (Sterets Unisept) states that contact with the brain, eyes, meninges, and the middle ear should be avoided, but there is no specific advice on avoiding contact with mucous membranes (Seton Prebbles, January 1996). As our case illustrates, allergic reactions to chlorhexidine may be life threatening. It also shows the importance of taking a detailed drug history that pays particular attention to previous reactions.

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