



Letters to the Editor

Does intrapartum antibiotic prophylaxis decrease the incidence of maternal group B streptococcal infections?

Sir,

Streptococcus agalactiae (GBS) is a leading cause of neonatal infection, but is also responsible for nearly half all symptomatic maternal infections such as clinical chorioamnionitis and endometritis.¹ The maternal GBS carriage rate was 18% in a prospective cohort study of 9932 deliveries over three years (1994-1996) in a level 3 American community hospital.²

Antibiotic prophylaxis has reduced neonatal infections substantially, but studies on the incidence and severity of maternal infections are few.³⁻⁵ A 2.8% endometritis incidence rate was reported in a study applying the Centers for Disease Control and Prevention (CDC) protocol.⁶ This prevention protocol recommends universal maternal perineum screening between 35 and 37 weeks of pregnancy and intrapartum antibiotic prophylaxis in cases of positive maternal carriage or when maternal risk factors for infection are present. It is one of several protocols. So far, no one has been proven superior to another.⁷

In order to assess maternal and neonatal infection rates, the level 3 maternity unit of the Centre Hospitalier Lyon Sud (CHLS) started monitoring infections in 1992 after implementation of preventive measures, with no change in practice other than introduction of CDC guidelines (using ampicillin, a broad-spectrum penicillin) in June 1999. We report here the impact of antibiotic prophylaxis on maternal infections, in particular endometritis, for vaginal deliveries between January 1 and December 31, 2000.

A single gynaecologist (A.M.D.) collated data from hospital records for several variables including patient age, parity, and known risk factors for infection. The study endpoints were the number of cases of endometritis and the number of nosocomial infections. Data were analysed by the Mantel-Haentzel² test and Fisher's exact test for

small numbers (EpiInfo V6 software from the Epidemiology Program Office, CDC, Atlanta) using a <0.05 significance level.

There were 1134 vaginal deliveries at CHLS in the year 2000. Data were missing for three patients. Mean parity was 1.8. Mean time to delivery was 39.2 weeks. Mean hospital stay was four days. Of the 1131 women, 111 (9.8%) had one or more pregnancy-related disorders and 170 (15%) had a condition carrying a risk of infection. A perineal sample to screen for GBS infection was taken from 1037 women (92%). Intrapartum antibiotic prophylaxis was given to 270 (24%). This percentage is in line with data from other centres.⁸ We were able to identify 26 instances of poor compliance with the protocol.

The presence of risk factors for infection that might have been related to vaginal delivery procedures was comparable in patients receiving and not receiving antibiotics. Diabetes, preterm delivery and premature rupture of the membranes were significantly more frequent in patients receiving antibiotics. However, nosocomial infections and endometritis were not more common in patients with a risk factor for infection than those without. These risk factors were thus not included in the final analysis.

Overall, 52 patients (4.6%) developed a nosocomial infection and 11 (1%) presented with endometritis. Antibiotic prophylaxis was associated with a reduced incidence of nosocomial infections (fall from 4.9 to 3.7%) and of endometritis (fall from 1.2 to 0.4%), but these reductions were not significant (Table I). They could not be explained by differences in risk factors and obstetrical procedures.

A large-scale prospective study is now needed to confirm the relationship between antibiotic prophylaxis against GBS and endometritis. To be adequately powered (risk of $\alpha = 5\%$ and $\beta = 20\%$) this study would have to include 15 780 vaginal deliveries on the assumption that 24% patients receive antibiotics, 0.8% develop endometritis and that antibiotic prophylaxis halves the incidence rate. Such a study was initiated in 2003 by the multi-regional surveillance network ('MaterSud Est'), which we helped set up in 1995.

Table 1 Number and incidence of nosocomial infections and endometritis at the maternity unit of Centre Hospitalier Lyon Sud (2000)

	Number of cases (percent incidence)		Odds ratio (OR)	Relative risk (RR)
	Antibiotic (N = 270)	No antibiotic (N = 861)		
Nosocomial infections	10 (3.7%)	42 (4.9%)	0.75 (0.35 < OR < 1.59)	0.80 (0.45 < RR < 1.41)
Endometritis ^a	1 (0.4%)	10 (1.2%)	0.32 (0.01 < OR < 2.43)	0.38 (0.06 < RR < 2.46)

^a Fisher exact test: 0.22.

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A.M. Dumas^{a,*}, R. Girard^b, A. Vincent-Bouletreau^b,
E. Caillat-Vallet^b, C. Battie^a, F. Houessou^a,
J. Lafarge-Leboucher^a, M. Berland^a, J. Fabry^b
^aDepartment of Obstetrics and Gynecology,
Centre Hospitalier Lyon Sud (Pavillon 3B),
165, Chemin du Grand Revoyet,
69495 Pierre Bénite Cedex, France
^bHygiene and Epidemiology Unit,
Centre Hospitalier Lyon Sud (Pavillon 3B),
165, Chemin du Grand Revoyet,
69495 Pierre Bénite Cedex, France
E-mail address: anne-marie.dumas@chu-lyon.fr

Available online 3 August 2004

*Corresponding author. Tel.: +33-478865606; fax: +33-478865604
doi:10.1016/j.jhin.2004.04.005

The value of using chlorhexidine soap in a controlled trial to eradicate MRSA in colonized patients

Sir,

In their recent paper, Dryden *et al.*¹ report that the use of tea tree topical preparations may be effective in the eradication of methicillin-resistant *Staphylococcus aureus* (MRSA) in patients who have nasal, dermal and wound colonization. The methods used raise some issues. First of all, the duration of the antiseptic body wash is not detailed. Both the chlorhexidine soap and the tea tree body wash are presumably 'rinse off' preparations and are washed off after the treatment. Differences in the duration of treatments with the two preparations may explain the differences in clearance rates rather than the preparations themselves. Treatment with chlorhexidine soap may have been shorter than treatment with the tea tree body wash as it is known that repetitive use of chlorhexidine soap leads to skin irritation.² Another issue relates to the control of the trial. A standard treatment regimen used as a control included chlorhexidine soap for the treatment of the skin. However, the authors do not state whether the chlorhexidine soap served as a positive or negative control. If the chlorhexidine soap served as a positive control, no scientific justification is presented. The simple presence of an antiseptic agent like chlorhexidine in the soap is, from my point of view, not sufficient. I am not aware of any study, not even an open, uncontrolled one, that clearly demonstrates successful eradication of dermal MRSA colonization using chlorhexidine soap.^{3,4} On the contrary, chlorhexidine is known to have only weak in vitro activity against MRSA.⁵ Two other studies further support my concerns. In wash tests after artificial contamination of hands with MRSA, a handwash with chlorhexidine soap did not yield a significantly higher MRSA eradication rate compared with plain soap,^{6,7} which raises doubts about the advantage of