Group B streptococcal infection risk factors

The authors of the Canadian Task Force on Preventive Health Care statement on the prevention of neonatal invasive group B streptococcal (GBS) infection[1] have reviewed the literature to produce recommendations for prevention. They advocate selective intrapartum chemoprophylaxis based on a combination of screening and risk factors. However, they do not note that only 50% of the mothers of infants with GBS infection have the risk factors that they list. Thus, given the difficulties in following a complex protocol in clinical practice and the fact that many mothers deliver too quickly to benefit from any strategy of intrapartum chemoprophylaxis, the maximum potential benefit of the strategy they propose would be a reduction in neonatal GBS infection of about 40%. The benefit of adding universal screening to the risk-factor approach is to reduce the number of mothers who receive intrapartum chemoprophylaxis while in labour, but this will inevitably also lead to a slight reduction in the program's effectiveness.

The authors concentrate on the "number needed to treat," which will of course be smaller with a more focused approach, but they do not address the proportion of total cases that will be prevented. Data on over 600 000 deliveries collected through an ongoing US Centers for Disease Control and Prevention surveillance program have shown that the screening-based approach is greater than 50% more effective than a risk-factor approach.[2] An approach based on risk factors plus screening cannot be more effective than an approach based on risk factors alone.

Although it is a laudable goal to reduce the number of women receiving intrapartum antibiotics, there is no a priori reason why that goal (efficiency) should take precedence over the goal of preventing the largest number of cases (effectiveness). With the use of penicillin rather than ampicillin, ongoing analysis of resistance patterns and the use of cefazolin instead of erythromycin or clindamycin for penicillin-sensitive mothers, the risks to the population of this very brief course of focused therapy should be minimized.

The strategy suggested by the task force may be one of the most efficient approaches, but it is one of the least effective.

Keith J. Barrington
Neonatologist
McGill University
Montreal, Que.

References

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2. Factor SH, Whitney CG, Zywicki SS, Schuchat A. Effects of hospital policies based on 1996 group B streptococcal disease consensus guidelines. The Active Bacterial Core Surveillance Team. *Obstet Gynecol* 2000;95(3):377-82.

[The Canadian Task Force on Preventive Health Care responds:]

We thank Keith Barrington for his interest in the recommendation statement on GBS infection in newborns.[1] As noted at the end of the article, the statement published in *CMAJ* is based on a technical report available online at www.ctfphc.org or from the task force office at ctf@ctfphc.org.[2] In that report, we systematically review the evidence relating to the effectiveness of 3 different strategies for the prevention of early-onset GBS infection in the newborn. We state that 2 strategies reduce the incidence of GBS colonization and early-onset infection: 1) universal screening for GBS at 35–37 weeks followed by selective intrapartum chemoprophylaxis given to colonized women with risk factors and 2) universal screening for GBS at 35–37 weeks and intrapartum chemoprophylaxis of all colonized women. However, based on the number of women who need to be treated, strategy A appears to be more efficient. (To our knowledge, strategy C, which is based on risk factors only, has not been evaluated.)

Barrington misquotes the surveillance study by Factor and colleagues,[3] who concede in their discussion section, "We did not have a large enough sample to differentiate between types of policies, such as screening and risk-based approaches."[3] Although the authors show that there was a temporal association between the adoption of guidelines for the prevention of GBS infection in the newborn and a reduction of early-onset infection, the incidence of GBS infection was reduced from 1.29 cases per 1000 live births to 0.58 per 1000 live births (p = 0.006). From this study, one cannot conclude that a given strategy is better than another.

No trial comparing strategy A against B has been conducted to determine which is most effective in reducing early-onset GBS infection. As it is a very rare occurrence, a very large number of pregnant women would need to be enrolled in such a trial.

Vibhuti Shah
Arne Ohlsson
Canadian Task Force on Preventive Health Care
London, Ont.

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Risks of Friday discharges: Meaningful?

Carl van Walraven and Chaim Bell studied more than 2.4 million patient discharges from hospital.[1] They