

## **What is GBS?**

The bacteria that causes group B strep normally lives in the intestine, vagina, or rectal areas. Group B strep colonization is not a sexually transmitted disease (STD). For most women there are no symptoms of carrying the GBS bacteria. It naturally occurs.

## **How does someone get group B strep?**

The bacteria that causes group B strep normally lives in the intestine, vagina, or rectal areas. Group B strep colonization is not a sexually transmitted disease (STD). Approximately 15-40% of all healthy women carry group B strep bacteria. For most women there are no symptoms of carrying the GBS bacteria.

## **What if I test positive for Group B Strep infection?**

If you test positive for GBS this simply means that you are a carrier. Not every baby who is born to a mother who tests positive for GBS will become ill. Approximately one of every 100 to 200 babies whose mothers carry GBS will develop signs and symptoms of GBS disease. There are, however, symptoms that may indicate that you are at a higher risk of delivering a baby with GBS. These symptoms include:

- Labor or rupture of membrane before 37 weeks
- Rupture of membrane 24 hours or more before delivery
- Fever during labor
- A urinary tract infection as a result of GBS during your pregnancy
- A previous baby with GBS disease

## **What can I do?**

The Centers for Disease Control and Prevention (CDC) has recommended routine screening for vaginal strep B for all pregnant women. This screening is performed between the 35th and 37th week of pregnancy. Anytime other than this time will not be significant to show if a woman is carrying GBS during the time of her delivery.

The test involves a swab of both the vagina and the rectum. The sample is then taken to a lab where a culture is analyzed for any presence of GBS. Test results are usually available within 24 to 48 hours.

If your GBS/vaginal cultures are complete and you are positive for GBS, this does not mean you have an infection, just that you are 1 of 10-30% of women who are positive for finding the

bacteria in their system while pregnant. The lowest growth you can have is, 'Light Growth Isolated.' You can be 'Isolated', 'Moderate' or 'Heavy' in growth.

We have been following studies and research showing great success in using Hibiclens, as well as our clients. Women who tested positive with a heavy growth reduce their growth to isolated. And most our expecting mothers are negative when they go into labor. Data supports its effectiveness equal to the IV protocol in use in the USA, but it is totally ignored due to the widespread use of IV in labor in the US."



We would like you to purchase Hibiclens (found at most drugstores) antimicrobial and antiseptic cleanser and use it help keep GBS isolated or get rid of it completely.

**\*WE ARE FULLY AWARE THAT THE LABEL SAYS NOT TO PUT ON GENITALS. WE ARE HAVING YOU DILUTE IT TO AN AMOUNT THAT IS SAFE AND PREVENTATIVE.\***

**Hibiclens:** an antiseptic found at many drug stores diluted with water wash vaginally with it 3 times a day, sitting on the toilet or in tub, squirt the inner (lower) part of the vaginal canal. Think of this as a gentle cleansing, not a douche!! Finish off by squirting the outer part of the vagina and labia. This is a very effective means of washing the outer half of the vagina, where bacteria are most likely to reside.

Prepare 0.5 oz of Hibiclens in 7.5 - 8 ozs of warm water in a peri-bottle or something similar.

You will do this every day until delivery! We will do the culture again after you've been doing the wash for a couple weeks.

The current standard of care involves determining a woman's GBS status, while this is not a legal requirement it is offered to every expecting mother. If a women's GBS status is not determined, treatment with IV antibiotics is strongly recommended if there is:

- Preterm labour (less than 37 weeks),
- Ruptured membranes for longer than 18 hours,
- Maternal fever during labour (temperature greater than 38 C orally or 100.4 F),
- Previous delivery of a newborn with GBS or evidence of GBS urinary infection.

## **Facts Associated with GBS**

### ***Women***

- GBS can trigger premature labor and has also been linked with maternal infection. Including infection of the urinary tract, amnionitis (infection of the bag of waters) endometritis (infection of the uterus).
- Women who carry GBS but do not develop a fever during labor > 38 C or 100.4 F, have ruptured membranes over 18 hours or have labor or ruptured membranes before 37 weeks, have a relatively low risk of delivering an infant with GBS disease.
- With antibiotic therapy a mild allergic reaction to penicillin occurs in 1 out of 10 women.
- There is a 1 in 10,000 chance of developing a severe allergic reaction (anaphylaxis). This is a life-threatening condition which requires emergency treatment.

### ***Newborn***

- The likelihood of GBS disease of the newborn is about 2/1000 live births.
- The likelihood of a GBS positive mother delivering a baby with GBS disease is approximately 1 out of every 100-200 births if no antibiotics are given. This is reduced to 1:4000 if antibiotics are given.
- Preterm infants and infants weighing less than 2500g have a much higher infection rate.
- Babies that survive a serious infection with GBS, particularly those who have meningitis, may have long-term problems, such as hearing or vision loss or learning disabilities. Approximately 15-20% of GBS infected babies will not survive.

### **Signs of GBS infection in the Newborn**

GBS is usually present as blood poisoning, pneumonia, or meningitis. Signs of GBS infection usually become apparent within the first two days of life, but may occur within hours of birth. Signs of an infection in a newborn can be difficult to determine. They include lethargy, poor feeding, high/low temperatures, irritability, high/low breathing rates, and breathing difficulties as seen by flaring of the nostril, labored breathing, grunting noises, and/or a blue appearance.

**Informed Consent or Informed Refusal for Antenatal GBS Testing**

I, \_\_\_\_\_,

CONSENT \_\_\_\_\_ DO NOT CONSENT \_\_\_\_\_ to testing for GBS at this time.

I understand that this is a screening test only, that no method of screening and/or prophylactic treatment is 100% effective in preventing GBS. I also understand that GBS screening and prophylactic treatment can reduce the incidence of GBS disease. I have had my questions answered and can make an informed decision regarding GBS testing.

Client Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Midwife Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Vaginal Chlorhexidine for GBS Prophylaxis - Abstracts

J Matern Fetal Neonatal Med 2002 Feb; 11(2):84-8. *Chlorhexidine vaginal flushings versus systemic ampicillin in the prevention of vertical transmission of neonatal group B streptococcus*, at term. Facchinetti F, Piccinini F, Mordini S, Volpe A. Department of Gynecology, Obstetrics and Pediatric Sciences, University of Modena and Reggio Emilia, Italy.

**OBJECTIVE:** To investigate the efficacy of intrapartum vaginal flushings with chlorhexidine compared with ampicillin in preventing group B streptococcus transmission to neonates. **METHODS:** This was a randomized controlled study, including singleton pregnancies delivering vaginally. Rupture of membranes, when present, must not have occurred more than 6 h previously. Women with any gestational complication, with a newborn previously affected by group B streptococcus sepsis or whose cervical dilatation was greater than 5 cm were excluded. A total of 244 group B streptococcus-colonized mothers at term (screened at 36-38 weeks) were randomized to receive either 140 ml chlorhexidine 0.2% by vaginal flushings every 6 h or ampicillin 2 g intravenously every 6 h until delivery. Neonatal swabs were taken at birth, at three different sites (nose, ear and gastric juice).

**RESULTS:** A total of 108 women were treated with ampicillin and 109 with chlorhexidine. Their ages and gestational weeks at delivery were similar in the two groups. Nulliparous women were equally distributed between the two groups (ampicillin, 87%; chlorhexidine, 89%). Clinical data such as birth weight (ampicillin, 3,365 +/- 390 g; chlorhexidine, 3,440 +/- 452 g), Apgar scores at 1 min (ampicillin, 8.4 +/- 0.9; chlorhexidine, 8.2 +/- 1.4) and at 5 min (ampicillin, 9.7 +/- 0.6; chlorhexidine, 9.6 +/- 1.1) were similar for the two groups, as was the rate of neonatal group B streptococcus colonization (chlorhexidine, 15.6%; ampicillin, 12%). **Escherichia coli, on the other hand, was significantly more prevalent in the ampicillin (7.4%) than in the chlorhexidine group (1.8%, p < 0.05).** Six neonates were transferred to the neonatal intensive care unit, including two cases of early-onset sepsis (one in each group).

**CONCLUSIONS:** In this carefully screened target population, intrapartum vaginal flushings with chlorhexidine in colonized mothers display the same efficacy as ampicillin in preventing vertical transmission of group B streptococcus. Moreover, the rate of neonatal E. coli colonization was reduced by chlorhexidine. *BMJ* 1997 Jul 26;315(7102):216-9; discussion 220 Comment in: *BMJ*. 1997 Jul 26;315(7102):199-200. *Effect of cleansing the birth canal with antiseptic solution on maternal and newborn morbidity and mortality in Malawi: clinical trial.* Taha TE, Biggar RJ, Broadhead RL, Mtimavalye LA, Justesen AB, Liomba GN, Chiphangwi JD, Miotti PG. Department of Epidemiology, School of Hygiene and Public Health, Johns Hopkins University, Baltimore MD 21205, USA. **OBJECTIVE:** To determine if cleansing the birth canal with an antiseptic at delivery reduces infections in mothers and babies postnatally. **DESIGN:** Clinical trial; two months of no intervention were followed by three months of intervention and a final month of no intervention.

**SETTING:** Queen Elizabeth Central Hospital (tertiary care urban hospital), Blantyre, Malawi. **SUBJECTS:** A total of 6965 women giving birth in a six month period and their 7160 babies. **INTERVENTION:** Manual wipe of the maternal birth canal with a 0.25% chlorhexidine solution at every vaginal examination before delivery. Babies born during the intervention were also wiped with chlorhexidine. **MAIN OUTCOME MEASURES:** Effects of the intervention on neonatal and maternal morbidity and mortality. **RESULTS:** 3635 women giving birth to 3743 babies were enrolled in the intervention phase and 3330 women giving birth to 3417 babies were enrolled in the non-intervention phase. There were no adverse reactions related to the intervention among the mothers or their children. Among infants born in the intervention phase, overall neonatal admissions were reduced (634/3743 (16.9%) v 661/3417 (19.3%), P < 0.01), as were admissions for neonatal sepsis (7.8 v 17.9 per 1000 live births, P < 0.0002), overall neonatal mortality (28.6 v 36.9 per 1000 live births, P < 0.06), and mortality due to infectious causes (2.4 v 7.3 per 1000 live births, P < 0.005). Among mothers receiving the intervention, admissions related to delivery were reduced (29.4 v 40.2 per 1000 deliveries, P < 0.02), as were admissions due to postpartum infections (1.7 v 5.1 per 1000 deliveries, P = 0.02) and duration of hospitalization (Wilcoxon P = 0.008). **CONCLUSIONS:** Cleansing the birth canal with chlorhexidine reduced early neonatal and maternal postpartum infectious problems. The safety, simplicity, and low cost of the procedure suggest that it should be considered as standard care to lower infant and maternal morbidity and mortality.

*Int J Antimicrob Agents* 1999 Aug;12(3):245-51 *Vaginal disinfection with chlorhexidine during childbirth.* Stray-Pedersen B, Bergan T, Hafstad A, Normann E, Groggaard J, Vangdal PDF created with pdfFactory trial version [www.pdffactory.com](http://www.pdffactory.com) M. Department of Gynecology and Obstetrics, Aker Hospital, University of Oslo, Norway. The purpose of this study was to determine whether chlorhexidine vaginal douching, applied by a squeeze bottle intrapartum, reduced mother-to-child transmission of vaginal microorganisms including Streptococcus agalactiae (streptococcus serogroup B = GBS) and hence infectious morbidity in both mother and child. A prospective controlled study was conducted

on pairs of mothers and their offspring. During the first 4 months (reference phase), the vaginal flora of women in labor was recorded and the newborns monitored. During the next 5 months (intervention phase), a trial of randomized, blinded placebo controlled douching with either 0.2% chlorhexidine or sterile saline was performed on 1130 women in vaginal labor. During childbirth, bacteria were isolated from 78% of the women. Vertical transmission of microbes occurred in 43% of the reference deliveries. In the double blind study, vaginal douching with chlorhexidine significantly reduced the vertical transmission rate from 35% (saline) to 18% (chlorhexidine), ( $P < 0.0001$ , 95% confidence interval 0.12- 0.22). The lower rate of bacteria isolated from the latter group was accompanied by a significantly reduced early infectious morbidity in the neonates ( $P < 0.05$ , 95% confidence interval 0.00-0.06). This finding was particularly pronounced in *Str. agalactiae* infections ( $P < 0.01$ ). In the early postpartum period, fever in the mothers was significantly lower in the patients offered vaginal disinfection, a reduction from 7.2% in those douched using saline compared with 3.3% in those disinfected using chlorhexidine ( $P < 0.05$ , 95% confidence interval 0.01-0.06). A parallel lower occurrence of urinary tract infections was also observed, 6.2% in the saline group as compared with 3.4% in the chlorhexidine group ( $P < 0.01$ , 95% confidence interval 0.00-0.05). This prospective controlled trial demonstrated that vaginal douching with 0.2% chlorhexidine during labor can significantly reduce both maternal and early neonatal infectious morbidity. The squeeze bottle procedure was simple, quick, and well tolerated. The beneficial effect may be ascribed both to mechanical cleansing by liquid flow and to the disinfective action of chlorhexidine:

Lancet 1992 Jul 11;340(8811):65-9. Comment in: Lancet. 1992 Sep 26;340(8822):791; discussion 791-2. Lancet. 1992 Sep 26;340(8822):792. *Prevention of excess neonatal morbidity associated with group B streptococci by vaginal chlorhexidine disinfection during labor.* The Swedish Chlorhexidine Study Group. Burman LG, Christensen P, Christensen K, Fryklund B, Heigesson AM, Svenningsen NW, Tullus K. National Bacteriological Laboratory, Stockholm, Sweden. *Streptococcus agalactiae* transmitted to infants from the vagina during birth is an important cause of invasive neonatal infection. We have done a prospective, randomized, double-blind, placebo-controlled, multi-centre study of chlorhexidine prophylaxis to prevent neonatal disease due to vaginal transmission of *S. agalactiae*. On arrival in the delivery room, swabs were taken for culture from the vaginas of 4483 women who were expecting a full-term single birth. Vaginal flushing was then done with either 60 ml chlorhexidine diacetate (2 g/l) (2238 women) or saline placebo (2245) and this procedure was repeated every 6 h until delivery. The rate of admission of babies to specialcare neonatal units within 48 h of delivery was the primary end point. For babies born to placebo-treated women, maternal carriage of *S. agalactiae* was associated with a significant increase in the rate of admission compared with non-colonized mothers (5.4 vs 2.4%; RR 2.31, 95% CI 1.39-3.86;  $p = 0.002$ ). Chlorhexidine reduced the admission rate for infants born of carrier mothers to 2.8% (RR 1.95, 95% CI 0.94-4.03), and for infants born to all mothers to 2.0% (RR 1.48, 95% CI 1.01-2.16;  $p = 0.04$ ). Maternal *S. agalactiae* colonization is associated with excess early neonatal morbidity, apparently related to aspiration of the organism, that can be reduced with chlorhexidine disinfection of the vagina during labor.

Eur J Obstet Gynecol Reprod Biol 1989 Apr;31(1):47-51 *Prevention of group B streptococci transmission during delivery by vaginal application of chlorhexidine gel* Kollee LA, Speyer I, van Kuijk MA, Koopman R, Dony JM, Bakker JH, Wintermans RG. Department of Pediatrics, University Hospital, Nijmegen, The Netherlands. In a prospective study in 227 parturients, carriage of group B streptococci was established to be 25%. In carriers, transmission of streptococci to the newborn occurred in 50%. 10 ml of a chlorhexidine gel containing hydroxypropylmethylcellulose was introduced into the vagina during labor in 17 parturients, who were known to be carriers of group B streptococci from the first trimester of pregnancy. In none of the newborns from these mothers colonization by group B streptococci did occur. Vaginal application of chlorhexidine may prevent transmission of group B streptococci, and serve as an alternative to intrapartum prophylaxis using antibiotics. A large multicenter randomized controlled study should be performed to confirm this hypothesis.

Eur J Obstet Gynecol Reprod Biol 1985 Apr;19(4):231-6. *Chlorhexidine for prevention of neonatal colonization with group B streptococci.* III. Effect of vaginal washing with chlorhexidine before rupture of the membranes. Christensen KK, Christensen P, Dykes AK, Kahimeter G. A single vaginal washing with 2 g/l of chlorhexidine was performed before rupture of the membranes in 19 parturients who were PDF created with pdfFactory trial version [www.pdffactory.com](http://www.pdffactory.com) urogenital carriers of group B streptococci (GBS). Two (11%) of the infants became colonized immediately after birth, in contrast to 16 of 41 (39%) infants to controls ( $P = 0.02$ ). A significant reduction of GBS colonization of the ear ( $P = 0.02$ ) and umbilicus ( $P = 0.01$ ) was noted. Taken together, 2 of 57 (4%) cultures obtained at birth were positive in the chlorhexidine group, in contrast to 30 of 123 (24%) among the controls ( $P$  less than 0.01). **These findings raise hope for the design of a simple washing procedure which might prevent serious infections in the early neonatal period with GBS but also with other chlorhexidine-sensitive organisms.**