

## Amniotic Fluid Testing for Infection

Send a minimum of 3cc amniotic fluid to Microbiology laboratory for:

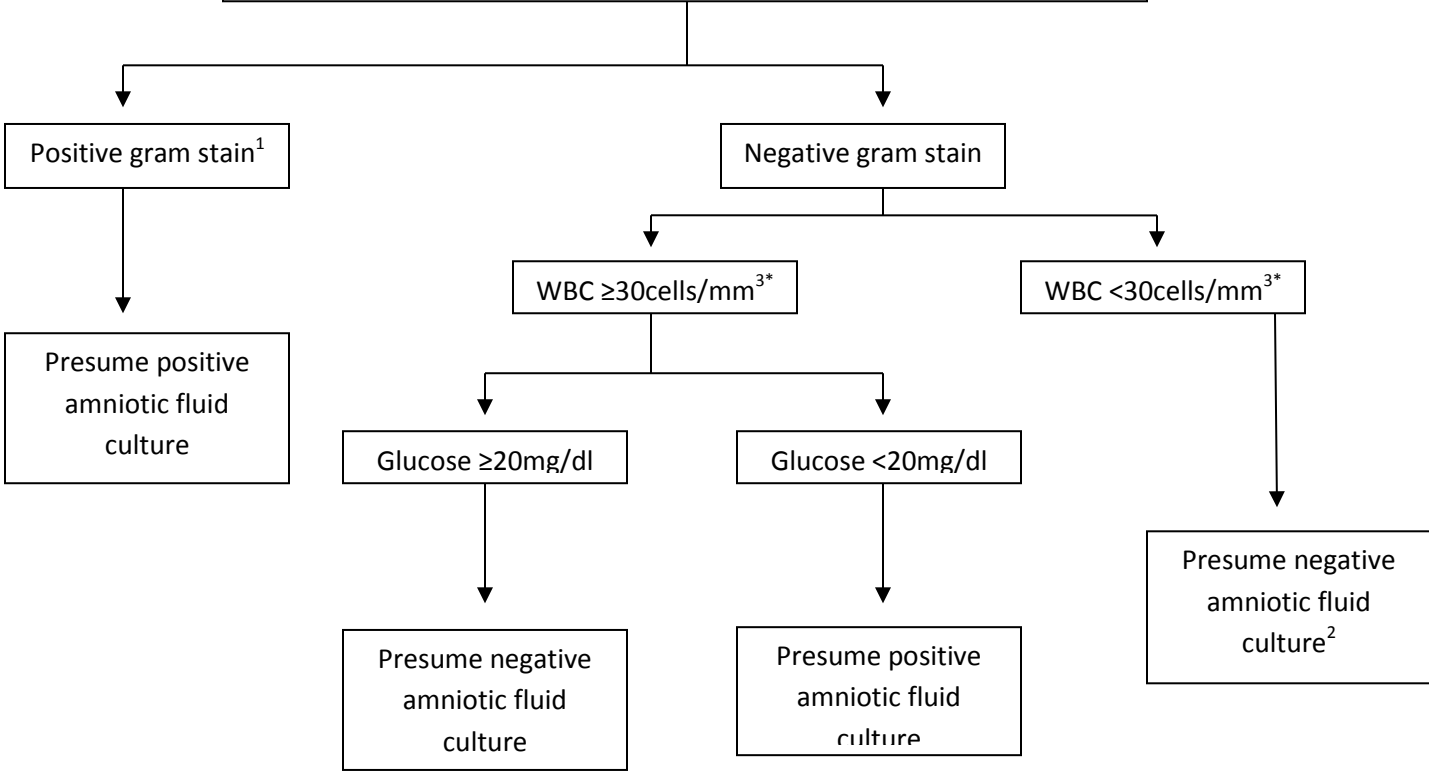
- 1) gram stain (unspun)
- 2) Mycoplasma/Ureaplasma cultures
- 3) Aerobic culture
- 4) Anaerobic culture

**AND**

Send a minimum of 2cc to Core laboratory for:

- 5) Cell count

Note: if karyotype/microarray desired; send additional fluid (20cc minimum) in separate containers to Core laboratory for cytogenetics



(% Neutrophils + % Lymphocytes)

\*WBC/mm<sup>3</sup> = Total Nucleated Cells x  $\frac{\quad}{100}$

## References

1. Romero R, Yoon BH, Mazor M, Gomez R, Diamond MP, Kenney JS, et al. The diagnostic and prognostic value of amniotic fluid white blood cell count, glucose, interleukin-6, and Gram stain in patients with preterm labor and intact membranes. **Am J Obstet Gynecol 1993; 169:805-816.** *Amniotic fluid IL-6 determination had the highest sensitivity (100% 11/11) for the detection of a positive amniotic fluid culture, but the Gram stain had the highest specificity (99.1%, 108/109).*

| Diagnostic indices of different amniotic fluid tests in the detection of positive amniotic fluid culture in patients with preterm labor and intact membranes |                |                  |
|--|----------------|------------------|
|  | Sensitivity    | Specificity      |
| Gram stain   | 7/11 (63.64%)  | 108/109 (99.08%) |
| IL-6 ( $\geq 11.30$ ng/ml)   | 11/11 (100.0%) | 90/109 (82.57%)  |
| WBC ( $\geq 30$ cells/mm <sup>3</sup> )  | 7/11 (63.64%)  | 103/109 (94.50%) |
| Glucose ( $\leq 14$ mg/dl)   | 9/11 (81.82%)  | 89/109 (81.65%)  |
| Gram stain + WBC ( $\geq 30$ cells/mm <sup>3</sup> )   | 10/11 (90.91%) | 102/109 (93.58%) |
| Gram stain + Glucose ( $\leq 14$ mg/dl)  | 10/11 (90.91%) | 88/109 (80.73%)  |
| Gram stain + IL-6  | 11/11 (100.0%) | 89/109 (81.65%)  |
| Gram stain + Glucose ( $\leq 14$ mg/dl) + WBC ( $\geq 30$ cells/mm <sup>3</sup> )  | 10/11 (90.91%) | 85/109 (77.98%)  |
| Gram stain + WBC ( $\geq 30$ cells/mm <sup>3</sup> ) + IL-6 ( $\geq 11.30$ ng/ml)  | 11/11 (100.0%) | 87/109 (79.82%)  |
| Gram stain + Glucose ( $\leq 14$ mg/dl) + IL-6 ( $\geq 11.30$ ng/ml)   | 11/11 (100.0%) | 78/109 (71.56%)  |
| Gram stain + WBC ( $\geq 30$ cells/mm <sup>3</sup> ) + IL-6 ( $\geq 11.30$ ng/ml) + Glucose ( $\leq 14$ mg/dl)   | 11/11 (100.0%) | 76/109 (69.72%)  |

2. Romero R, Yoon BH, Mazor M, Gomez R, Gonzalez R, Diamond MP, et al. A comparative study of the diagnostic performance of amniotic fluid glucose, white blood cell count, interleukin-6, and Gram stain in the detection of the microbial invasion in patients with preterm premature rupture of membranes. **Am J Obstet Gynecol 1993, 169:839-51.** *The combined use of the Gram stain and amniotic fluid white cell count determinations ( $>30/mm^3$ ) showed the highest specificity (77.9%, 53/68)... in the detection of a positive amniotic fluid culture.*

3. Abdel-Razeq SS, Buhimschi IA, Bahtiyar MO, Rosenberg VA, Dulay AT, Han CS, Werner EF, Thung S, Buhimschi CS. Interpretation of Amniotic Fluid White Blood Cell Count in "Bloody Tap" Amniocentesis in Women with Symptoms of Preterm Labor. **Obstet Gynecol 2010; 116:344-54.** *In the setting of an amniotic fluid sample contaminated with 1,000 RBCs/mm<sup>3</sup> or more, WBC count is less accurate indicator of inflammation and infection. In such samples, correction of WBC count enhances diagnostic performance (threshold 123 WBCs/mm<sup>3</sup>).*

Revised February 2013

### Notification to Users

*These algorithms are designed to assist the primary care provider in the clinical management of a variety of problems that occur during pregnancy. They should not be interpreted as a standard of care, but instead represent guidelines for management. Variation in practices should take into account such factors as characteristics of the individual patient, health resources, and regional experience with diagnostic and therapeutic modalities. The algorithms remain the intellectual property of the University of North Carolina at Chapel Hill School of Medicine. They cannot be reproduced in whole or in part without the expressed written permission of the school.*

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