202 GRANULOCYTE CHEMOTACTIC PROTEIN-2 (CXCL6): A NOVEL CHEMOKINE INVOLVED IN THE INNATE IMMUNE RESPONSE OF THE AMNIOTIC CAVITY

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OBJECTIVE: Granulocyte chemotactic protein-2 (CXCL6) is a potent neutrophil chemoattractant and activator. It functions as a pro-inflammatory and angiogenesis-promoting chemokine. CXCL6 is unique in that it acts as a ligand to both CXCR1 and CXCR2 receptors (similar to IL-8). The purpose of this study was to determine if: 1) CXCL6 is present in the amniotic cavity; and 2) CXCL6 concentrations in amniotic fluid (AF) change with labor (preterm and term) or intra-amniotic infection/inflammation (IAI).

STUDY DESIGN: A cross sectional study was conducted including the following groups: 1) mid-trimester (n=65); 2) term not in labor (n=20); 3) term in labor (n=44); 4) preterm labor (PTL) without IAI who delivered preterm (n=47); 5) PTL with IAI (n=62); and 6) patients with PTL who delivered at term (n=57). AF CXCL6 concentrations were determined by ELISA. Non-parametric statistics were used for analysis.

RESULTS: 1) The AF concentration of CXCL6 increased as a function of advancing gestational age ($r=0.80$; $p<0.01$); 2) Patients with PTL and IAI had a significantly higher median AF concentration of CXCL6 than those with PTL without IAI [median: 54.6 pg/ml (7.3-454.4) vs. median: 183.4 pg/ml (0.0-6856.6), respectively; $p<0.05$] and those with PTL who delivered at term [median: 41.2 pg/ml (7.4-279.0); $p<0.05$]; 3) Spontaneous term labor was not associated with a change in the concentration of AF CXCL6 [term not in labor: median: 81.1 pg/ml (8.5-201.7) vs. term in labor: median: 75.2 pg/ml (6.7-378.7); $p=0.74$].

CONCLUSION: 1) CXCL6 is detectable in AF and its concentration increases with gestational age; 2) Intra-amniotic infection/inflammation results in increased AF concentrations of CXCL6, suggesting that this chemokine plays a role in the deployment of an inflammatory response; 3) In contrast to related chemokines, specifically IL-8, CXCL6 does not appear to be involved in spontaneous parturition at term. These observations are novel, and suggest a role for CXCL6 in the innate immune response to microbial invasion of the amniotic cavity.

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203 ONCE DAILY VS. 8-HOUR GENTAMICIN DOSING FOR CHORIOAMNIONITIS

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OBJECTIVE: To compare once daily vs. 8-hour dosing regimens of gentamicin (Gent) for intrapartum chorioamnionitis (Chorio).

STUDY DESIGN: Women in labor or undergoing an induction with a clinical diagnosis of Chorio between 32-42 weeks gestation were randomized either to once daily Gent (5 mg/kg, then 2 placebo doses every 8 hours × 2) or to 8-hour Gent (2 mg/kg, then 1.5 mg/kg every 8 hours × 2). Both groups received ampicillin 2 grams I.V. every 6 hours. Clindamycin 900 mg I.V. was added for cesarean. The primary outcome was success, defined as afebrile (< 38 C) after 24 hours of Gent and without evidence of endometritis up to 10 days after delivery.

RESULTS: 126 women developed intrapartum Chorio and agreed to participate. 63 women were randomized to once daily Gent and 63 women were randomized to 8-hour Gent. One patient was excluded from data analysis. There were no differences in baseline maternal characteristics except for longer median duration of ruptured membranes in the 8-hour Gent group (555 vs. 420 min $p=0.03$). There were no differences in success of once daily vs. 8-hour dosing of Gent for resolution of fever, endometritis, length of postpartum stay, or presumed neonatal sepsis.

CONCLUSION: Once daily and 8-hour dosing regimens of Gent are equally effective for the treatment of intrapartum Chorio.

Once daily vs. 8-hour gentamicin

	Once Daily	8-Hour	P-value
Success	58 (93.6%)	56 (88.9%)	0.53
Median temp 24 hr	36.6 (36.3–37)	36.5 (36–37)	0.51
Cesarean	18 (29%)	23 (36.5%)	0.37
Endometritis	4 (6.5%)	5 (7.9%)	1.00
Median days postpartum	2 (2–4)	2 (2–4)	0.48
Presumed neonatal sepsis	4/63 (6.4%)	4/63 (6.4%)	1.00
Neonatal pneumonia	1/63 (1.6%)	0/63 (0%)	1.00
Normal hearing screen	63 (100%)	63 (100%)	n/a

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204 MATERNAL PLASMA CONCENTRATIONS OF C-REACTIVE PROTEIN AT 20-26 WEEKS IN LOW RISK PATIENTS AND THE SUBSEQUENT DEVELOPMENT OF CHORIOAMNIONITIS

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OBJECTIVE: Elevated maternal plasma C-Reactive Protein (CRP) concentrations in early pregnancy have been associated with the subsequent development of spontaneous preterm birth. Some studies have also demonstrated higher plasma concentrations of CRP in patients presenting in preterm labor who are later diagnosed with chorioamnionitis. The objective of this study was to elucidate the relationship between maternal plasma concentrations of CRP in low risk, asymptomatic patients at 20-26 weeks EGA and the subsequent development of histologic chorioamnionitis.

STUDY DESIGN: A nested case control study was performed within a prospective observational cohort of low risk patients seeking prenatal care. CRP was measured from maternal plasma collected at 20-26 weeks using a commercially available Enzyme Linked Immunosorbent Assay (ELISA) kit. All placentae were examined by a single blinded perinatal pathologist. Cases were defined by histologic chorioamnionitis, and controls were selected randomly from the cohort among patients without chorioamnionits.

RESULTS: 36 cases of chorioamnionits were identified within the cohort. Concentrations of CRP at 20-26 weeks are provided in Table 1. There were no significant differences ($p=0.44$).

CONCLUSION: The development of histologic chorioamnionitis is not associated with elevations in maternal plasma CRP earlier in pregnancy.

	Median	25%	75%
Chorio-amnionitis	7.0	0.9	25.2
Control	7.1	0.3	29.1

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205 EVALUATION OF CLINICAL SIGNS FOR DIAGNOSING HISTOLOGIC ACUTE CHORIOAMNIONITIS IN THE TERM PARTURIENT

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OBJECTIVE: Using histologic chorioamnionitis as the gold standard, the goal was to estimate the sensitivity, specificity, and predictive values of clinical signs in the diagnosis of acute chorioamnionitis in the placenta.

STUDY DESIGN: Case control study of 351 consecutively submitted placentas in term parturients from 2005. Slides reviewed for the presence (cases) or absence (controls) of histologic acute chorioamnionitis and classified according to Amniotic Fluid Infection Nosology Committee guidelines. Review of the electronic labor record facilitated collection of the intrapartum signs: fever ≥ 38°C, maternal tachycardia ≥ 120 bpm, fetal tachycardia ≥ 160 bpm baseline. Results expressed in number/percent with odds ratios, sensitivity, specificity, predictive values with 95% CIs calculated for each clinical sign.

RESULTS: The data are given in the tables.

CONCLUSION: Clinical signs in the term parturient are significantly associated with histologic acute chorioamnionitis, have high overall specificity and positive predictive value, but lack sensitivity; they fail to identify at least 56% of cases.

Sign	Controls (n = 141)	Cases (n = 210)	Odds Ratio (95% CI)
Fever ≥ 38°C	20 (14.2%)	93 (44.3%)	4.81 (2.9-8.3)
Maternal HR ≥ 120	42 (29.8%)	93 (44.3%)	1.87 (1.2-2.9)
Fetal HR ≥ 160	18 (12.8%)	75 (35.7%)	3.8 (2.16-6.7)
All of above	2 (1.4%)	35 (16.7%)	13.9 (3.6-53.1)

Sign	Sens.	Spec.	PPV	NPV
Fever ≥ 38°C	44.3% (37.4-51.3)	85.8% (79-91.1)	82.3% (74.0-88.8)	50.8% (44.3-57.4)
Maternal HR ≥ 120	44.3% (37.4-51.8)	70.2% (61.9-77.6)	45.8% (39.1-52.7)	45.8% (39.1-52.7)
HR ≥ 120	−51.8)	(61.9-77.6)	(39.1-52.7)	(39.1-52.7)
Fetal HR ≥ 160	35.7% (29.2-42.6)	87.2% (80.6-92.3)	80.6% (71.2-88.1)	47.7% (41.4-54)
All of above	16.7% (11.9-22.41)	98.6% (95-99.8)	94.6% (81.8,99.3)	44.3% (38.7,50)

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