

E0269 Invasive *Haemophilus influenzae* infections in pregnancy

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Background: The epidemiology of *Haemophilus influenzae* infections has dramatically changed, following the introduction of a successful vaccine against type b strains, almost 3 decades ago. Bacterial infections are common in pregnancy, frequently leading to early neonatal sepsis, and usually resulting from Enterobacteriaceae, group B streptococci, and enterococci. In the past decade, sporadic cases of severe maternal *H. influenzae* infections were noted in our hospital, with subjective impression of increment in incidence. Our aim was to analyze the epidemiology of *H. influenzae* maternal and early neonatal infections.

Materials/methods: Retrospective matched analyses were conducted at Assaf Harofeh Medical Center, Israel (2006-2017). Case patients consisted of adult (>18 years) pregnant women, with maternal infection per established definition, coupled with isolation of *H. influenzae* from a clinical sample obtained from a relevant source. Three control patients were matched to each case, based on calendar year and gestational week. Serotype and biotype were determined by PCR and conventional biochemical methods at the national reference laboratory of the ministry of health.

Results: Nineteen cases and 57 matched controls (overall 76 patients) were enrolled. Case patients' characteristics are depicted in the figure. All infections had resulted in chorioamnionitis or septic abortion, with poor neonatal outcomes. Thirteen strains were molecularly analyzed, all defined as nontypeable (non-capsulated), and assigned to various biotypes: III (46%), I (23%), II (23%), and V (8%). The incidence of maternal *H. influenzae* infections had not significantly increased during the study years (p for trend > 0.05). 6 strains (32%) were speculated to phenotypically express beta-lactamase. In matched case-control analysis, infections were significantly associated with pregnancy conceived in the presence of an intra-uterine device (IUD, RR=4.6, $p=0.01$), and with poor neonatal outcomes: i.e., 1) low birth weight ($p=0.05$) and early neonatal sepsis (OR=10, $p=0.05$).

Conclusions: *H. influenzae* infection in pregnancy results in adverse outcomes among affected women and their newborns. The incidence is stable, and isolated strains are nontypeable, and assigned to diverse biotypes. In a pregnancy conceived in the presence of an IUD, *H. influenzae* should be suspected early and empirically managed.

Name	Age	Gestational week	Year of admission	Infectious diagnosis	<i>H. influenzae</i> serotype	<i>H. influenzae</i> biotype	Beta-lactamase	Source of isolation	Outcome
B.S.A.	36	27	2006	Chorioamnionitis	Non-typable	Biotype V	Present	Blood, placenta	Urgent C/S, prematurity, early neonatal sepsis
B.S.E.	33	37	2009	Bacteremia	Non-typable	Biotype I	Absent	Blood	Induced delivery
N.H.	30	38	2016	Bacteremia	Non-typable	Biotype III	Absent	Blood	Induced delivery
L.L.S.	38	15	2009	Septic abortion	Non-typable	Biotype III	Present	Blood	Miscarriage
K.D.	29	14	2016	Septic abortion	Non-typable	Biotype III	Present	Blood	Miscarriage
R.A.G.	20	12	2010	Septic abortion	Non-typable	Biotype II	Absent	Blood, genital	Miscarriage
B.B.P.	23	8	2014	Septic abortion	Non-typable	Biotype I	Absent	Blood	Miscarriage
S.K.	27	11	2011	Septic abortion	Non-typable	Biotype III	Absent	Blood	Miscarriage
S.H.	30	16	2011	Septic abortion	Non-typable	Biotype II	Absent	Blood, placenta	Miscarriage
H.E.A.	27	15	2014	Septic abortion	Non-typable	Biotype I	Absent	Blood, genital	Miscarriage
T.G.	30	13	2006	Septic abortion	Non-typable	Biotype III	Present	Blood, placenta	Miscarriage
S.M.V.	37	28	2014	Chorioamnionitis			Present	Amniotic fluid	Urgent C/S, prematurity, early neonatal sepsis
O.I.	26	24	2015	Chorioamnionitis	Non-typable	Biotype III	Absent	Placenta	Prematurity, early neonatal sepsis
Y.P.	40	8	2007	Septic abortion			Absent	Genital	Miscarriage
A.A.A.	36	14	2012	Septic abortion			Absent	Placenta	Miscarriage
I.Y.M.	30	14	2008	Septic abortion			Absent	Genital, placenta	Miscarriage
I.C.	27	17	2008	Septic abortion			Absent	Placenta	Miscarriage
A.E.	30	19	2012	Septic abortion			Present	Genital	Miscarriage
H.N.L.	30	13	2017	Septic abortion	Non-typable	Biotype II	Absent	Blood	Miscarriage