

Maternal and neonatal outcomes of peripartum women with influenza-like illness

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INTRODUCTION

Influenza-like illness (ILI) is defined as fever + cough +/- sore throat. Among women who present with these symptoms, influenza is in the differential diagnosis. This study spans 5 years following the 2009 H1N1 epidemic and aims to investigate characteristics of peripartum women with ILI, to identify risk factors for severe disease and to identify influenza-related maternal and neonatal complications.

METHODS

Using microbiology data from Brigham and Women's Hospital between 2012 and 2016, a retrospective analysis was done among peripartum women with influenza tests available.

RESULTS

One hundred and twenty nine women were tested. Eighty five (65.9%) were vaccinated against influenza. Fourteen percent (14.0%) of the cohort had a positive influenza test, of whom 10 (55.6%) had received an influenza vaccine during pregnancy. Rates of antiviral treatment were higher in women with positive tests (88.9% vs 12.6%, $P < .05$) while those with negative tests were more likely to receive antibiotics. The most common presenting symptom was cough (62.7%), followed by fever (47.3%). Women with positive tests were more likely to present with cough (94.4% vs 57.7%, $p = 0.003$).

Sixty five women (50.3%) were hospitalized for non-obstetric (pneumonia and asthma exacerbation) and obstetric complications. Nine (13.8%) were admitted to the ICU. The odds of an ICU admission were higher for women who were immunosuppressed (OR 2.3, 95% CI 1.1-4.8). Women with positive tests were more likely to have respiratory failure (11.1% vs 0.9%, $P = .051$). Adverse neonatal outcomes were higher among those with negative influenza tests, specifically NICU admission rates (34.2% vs 5.6%, $P = 0.02$).

CONCLUSION

A small proportion of women presenting with ILI had laboratory-confirmed influenza. This may reflect the poor sensitivity of the test or another viral or bacterial illness. The low rate of influenza immunization in our cohort highlights the need for further education of providers and patients. Maternal outcomes can be improved by having a high index of suspicion and promptly treating women with ILI.

Figure 1: Clinical presentation of women with ILI

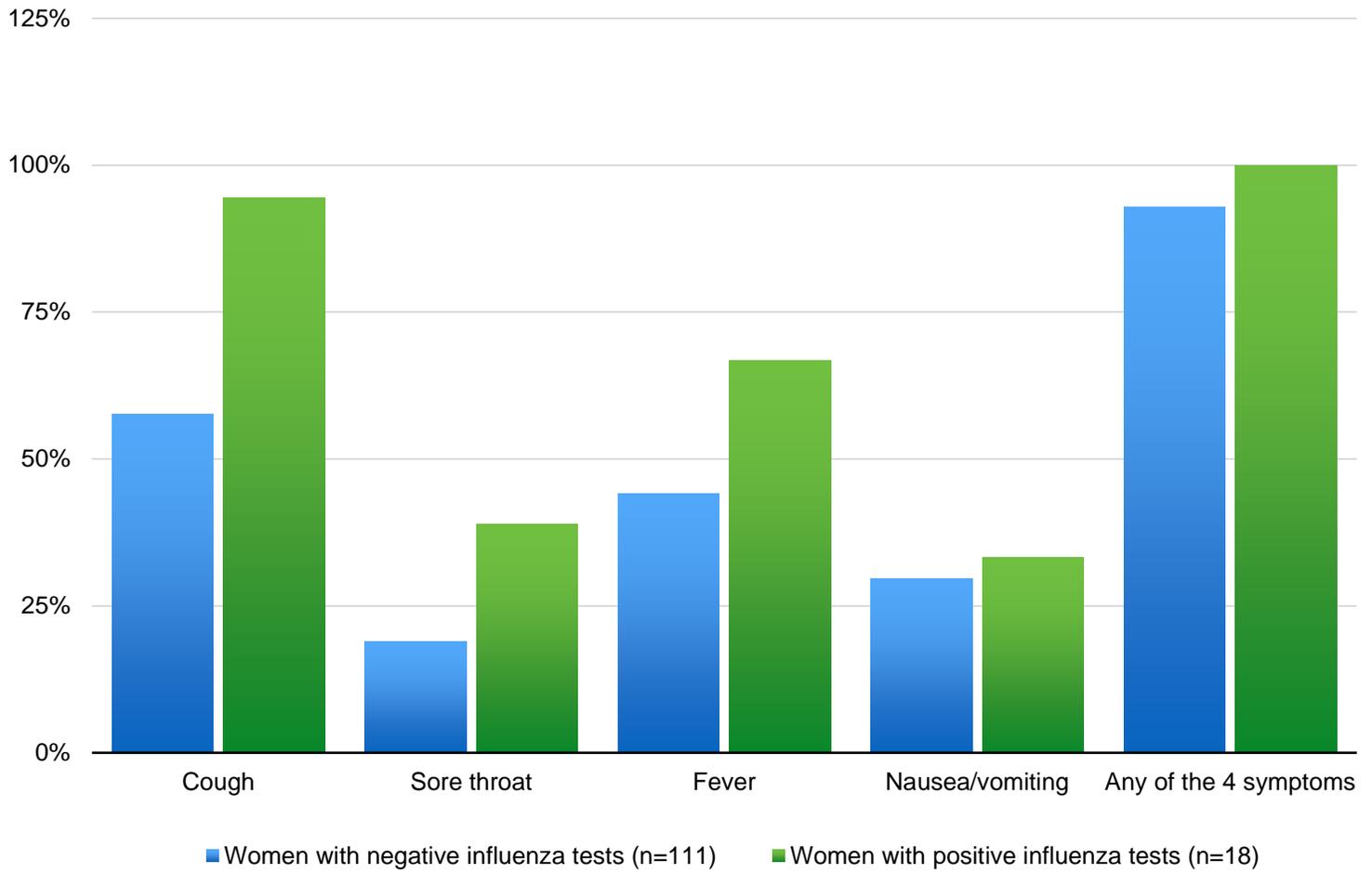


Table 1: Demographic and clinical characteristics of peripartum women with ILI

	Women with negative influenza tests (n=111)	Women with positive influenza tests (n=18)	p-value
Age	30.5 ± 5.5	32.2 ± 4.5	0.228
Race			0.486
Hispanic/Latino	39 (35.1%)	6 (33.3%)	
Asian	6 (5.4%)		
Black/African American	16 (14.4%)	4 (22.2%)	
White	48 (43.2%)	6 (33.3%)	
Other	2 (1.8%)	1 (5.6%)	
Unknown		1 (5.6%)	
Gravidity	2.8 ± 1.7	3.5 ± 1.5	0.089
Parity	1.1 ± 1.0	1.3 ± 1.1	0.547
Mean gestational age at presentation			
parous (weeks)	27.9 ± 7.3	24.3 ± 6.9	0.061
postpartum (days)	8.6 ± 5.3	2	0.248
Clinical characteristics			
diabetes	7 (6.3%)	1 (5.6%)	0.486
asthma	35 (31.5%)	6 (33.3%)	1.000
immunosuppression	13 (11.7%)	1 (5.6%)	0.691
heart disease	5 (4.5%)	2 (11.1%)	0.252
BMI>40	12 (10.8%)	2 (11.1%)	1.000
metabolic disease	22 (19.8%)	3 (16.7%)	1.000
Vaccine received	75 (67.6%)	10 (55.6%)	0.422
Mean gestational age of vaccination (weeks)	18.6 ± 9.5	18.5 ± 9.9	0.988
Received antivirals	14 (12.6%)	16 (88.9%)	0.000
Received antibiotics	38 (34.2%)	3 (16.7%)	0.264
Sick contacts	38 (34.2%)	5 (27.8%)	0.788