

## INTRODUCTION

- Infertility diagnosis and treatment have been linked to hypertensive disorders of pregnancy (HDP) <sup>1,2</sup>
  - Leading cause of maternal & fetal morbidity worldwide <sup>1,2</sup>
  - Risk factor for later cardiovascular health, a leading cause of mortality <sup>3,4</sup>
- Databases and claims reports have captured increase in cardiovascular risk factors and chronic disease<sup>5-8</sup>
- Review of literature demonstrates clinical heterogeneity
  - Few large-scale studies investigating pregnancy specific outcomes
  - Non-uniform control important confounders
  - Restrictions to either singleton or non-singleton births<sup>9,10</sup>

## OBJECTIVE

To explore associations between infertility treatment and hypertensive disorders of pregnancy using a nationally representative sample of women

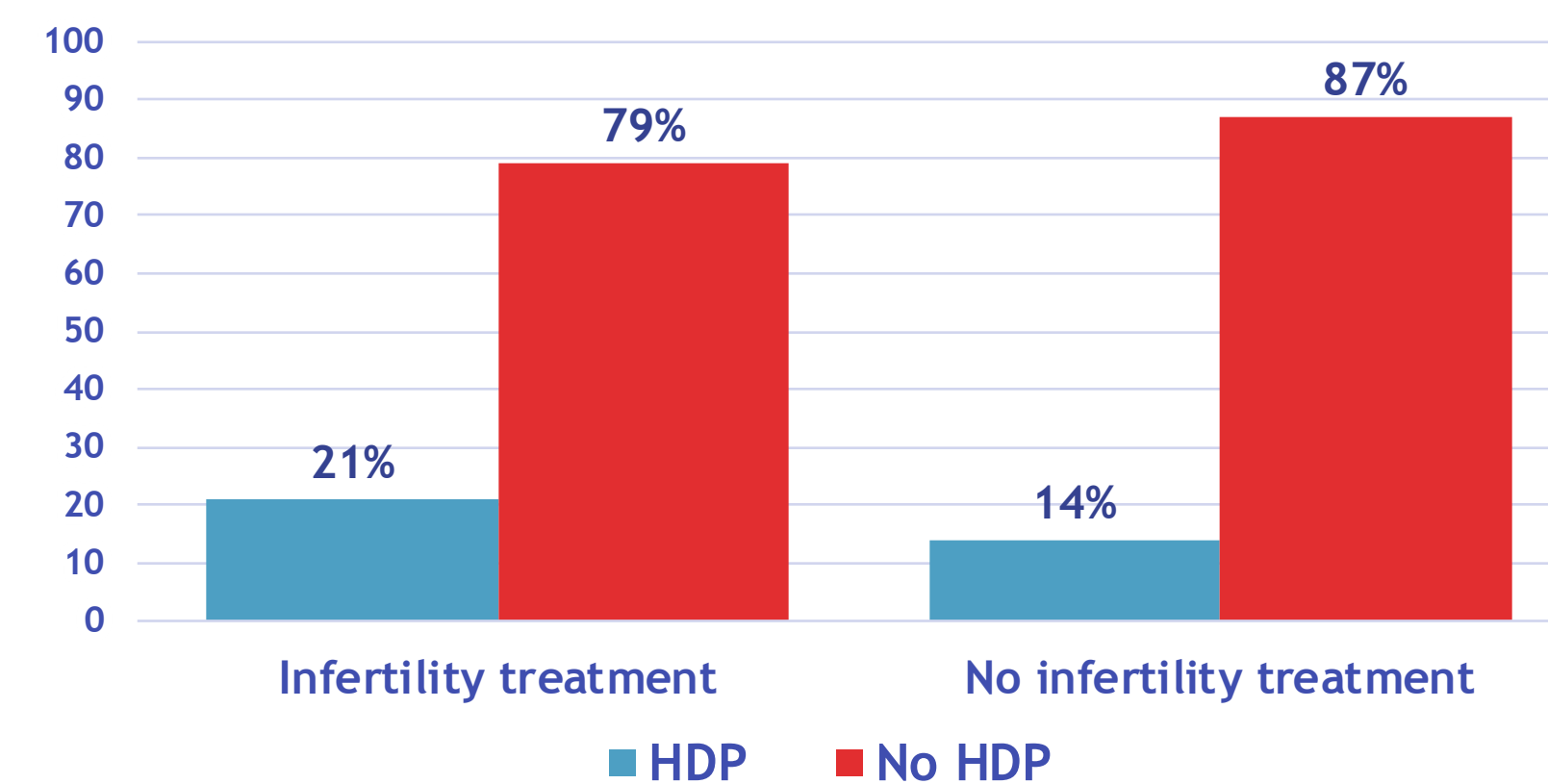
## MATERIALS & METHODS

- Centers for Disease Control and Prevention's Pregnancy Risk Assessment Monitoring System (PRAMS; 2009-2015)
- 21,884 U.S. participants with recent live birth
- "Did you have any of the following problems during your most recent pregnancy?"
  - "High blood pressure, hypertension (pregnancy-induced hypertension), preeclampsia, or toxemia"
  - "Did you take any fertility drugs or receive any medical procedures from a doctor...to help you get pregnant with your new baby? ...fertility-enhancing drugs or assisted reproductive technology."
- Covariates were considered based on known associations
- Unadjusted and adjusted logistic regression analyses
- Sensitivity analyses to determine if the type and timing of infertility treatment differentially contributed to the association

## RESULTS

- 2,826 participants reported use of infertility treatment
- Groups similar across almost all demographic characteristics
  - Infertility treatment group statistically more likely to report history of alcohol use and diabetes
- As shown in **Figure 1**, prevalence of HDP is higher in those reporting infertility treatment (21 vs 14%, p=<0.0001)
- As shown in **Table 1**, reported infertility treatment had 1.18 higher adjusted odds of HDP (p=0.0071)
- Neither types of infertility treatment or timing of treatment were independently associated with HDP

**Figure 1.** Percentage of respondents reporting HDP with and without infertility treatment, PRAMS, 2009-2015.



**Table 1.** Adjusted OR and confidence intervals; association between infertility treatment and HDP, PRAMS, 2009-2015.

	Adjusted OR (95% CI)	p (x <sup>2</sup> )		Adjusted OR (95% CI)	p (x <sup>2</sup> )
<20	1.02 (0.78-1.32)	<0.0001	Health insurance		0.0143
20-29	Reference		Private	Reference	
30-34	1.00 (0.90-1.10)		Medicaid or Other	1.14 (1.01-1.29)	
35-39	1.32 (1.17-1.49)		None	0.91 (0.78-1.06)	
40+	1.58 (1.29-1.93)		Infertility treatment		0.0071
Race/ethnicity			Yes	1.18 (1.05-1.33)	
Non-Hispanic White	Reference	<0.0001	No	Reference	
Non-Hispanic Black	1.15 (1.02-1.30)		Number of previous live births		<0.0001
Hispanic	0.61 (0.52-0.72)		0	Reference	
Other	0.70 (0.60-0.81)		1	0.50 (0.45-0.55)	
Maternal education		<0.0001	2	0.46 (0.40-0.52)	
<12 years	1.05 (0.88-1.26)		3+	0.44 (0.37-0.52)	
12 years	1.29 (1.15-1.45)		Birth plurality		<0.0001
>12 years	Reference		Single	Reference	
Pre-pregnancy BMI		<0.0001	Twin	2.08 (1.78-2.42)	
<18.5	0.77 (0.58-1.02)		Other	2.98 (1.73-5.14)	
18.5-24.9	Reference		Tobacco consumption		0.0006
25-29.9	1.88 (1.70-2.08)		Yes	1.22 (1.09-1.36)	
30+	3.27 (2.96-3.61)		No	Reference	

## DISCUSSION

- Primary finding is women reporting treatment of infertility are more likely to report HDP than those who did not receive treatment
- Strengths
  - Nationally representative
  - Large sample size
  - Similar effects of known risk factors
- Limitations
  - Retrospective data from self-report survey
  - Unable to assess HDP as a clinical spectrum
  - Data only captures live births
  - Poorly defined infertility treatment classification
- Present study adds to growing concern surrounding fertility status as a marker of overall health
- Data collection on treatment and tracking of obstetrical outcomes may identify subgroups at increased risk

## CONCLUSION

Undergoing infertility treatment is associated with increased risk of hypertension disorders of pregnancy  
Reproductive endocrinologists have a unique opportunity to counsel a motivated population to potential mitigate risks of chronic disease

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