

Sex-dependent effects of preeclampsia on birthweight and mortality.



PRESENTER:
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BACKGROUND:

Preeclampsia. (PE), birthweight (BW), and sex are all factors that impact an infant's mortality and long-term health. Preeclampsia directly impacts birthweight. However, the interaction between preeclampsia, sex, and birthweight is poorly understood.

H1: Males will have higher birthweight than females under any conditions, but will have higher mortality.

METHODS

1. Data is from US CDC natality and mortality files, 1989-1991 & 1995-2003.
2. After exclusions to control for external factors, N= 17,487,700 infants.
3. I used fetus-at-risk analyses for mortality.
4. Data was analyzed in SAS and Excel.

RESULTS

- Males have higher birthweight than females both with and without PE. There is a larger difference in birthweight between the sexes with PE, supported by the positive sex dependence (Table 1).
- Total mortality rate, in deaths per 1000 fetuses, is 6.527 for PE females, 7.344 for PE males, 3.06 for non-PE females, and 4.111 for non-PE males.

DISCUSSION

- My results show that the effect of preeclampsia on both birthweight and mortality varies with sex.
- I plan to consider different causes of death, to explore if these varying mortality rates are related to specific causes.

Male infants with preeclampsia have less reduction in birthweight compared to females, yet are more likely to die.

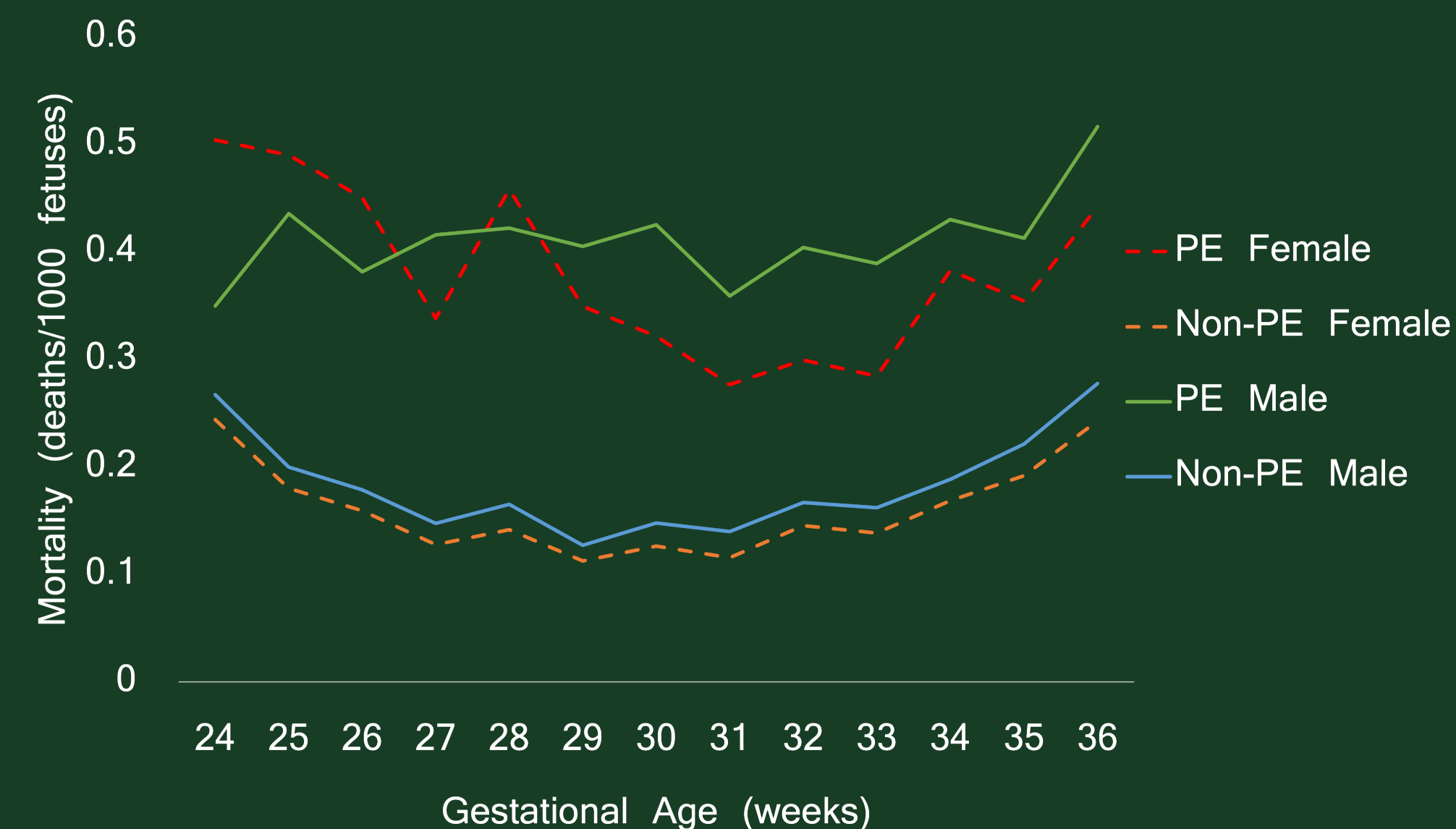
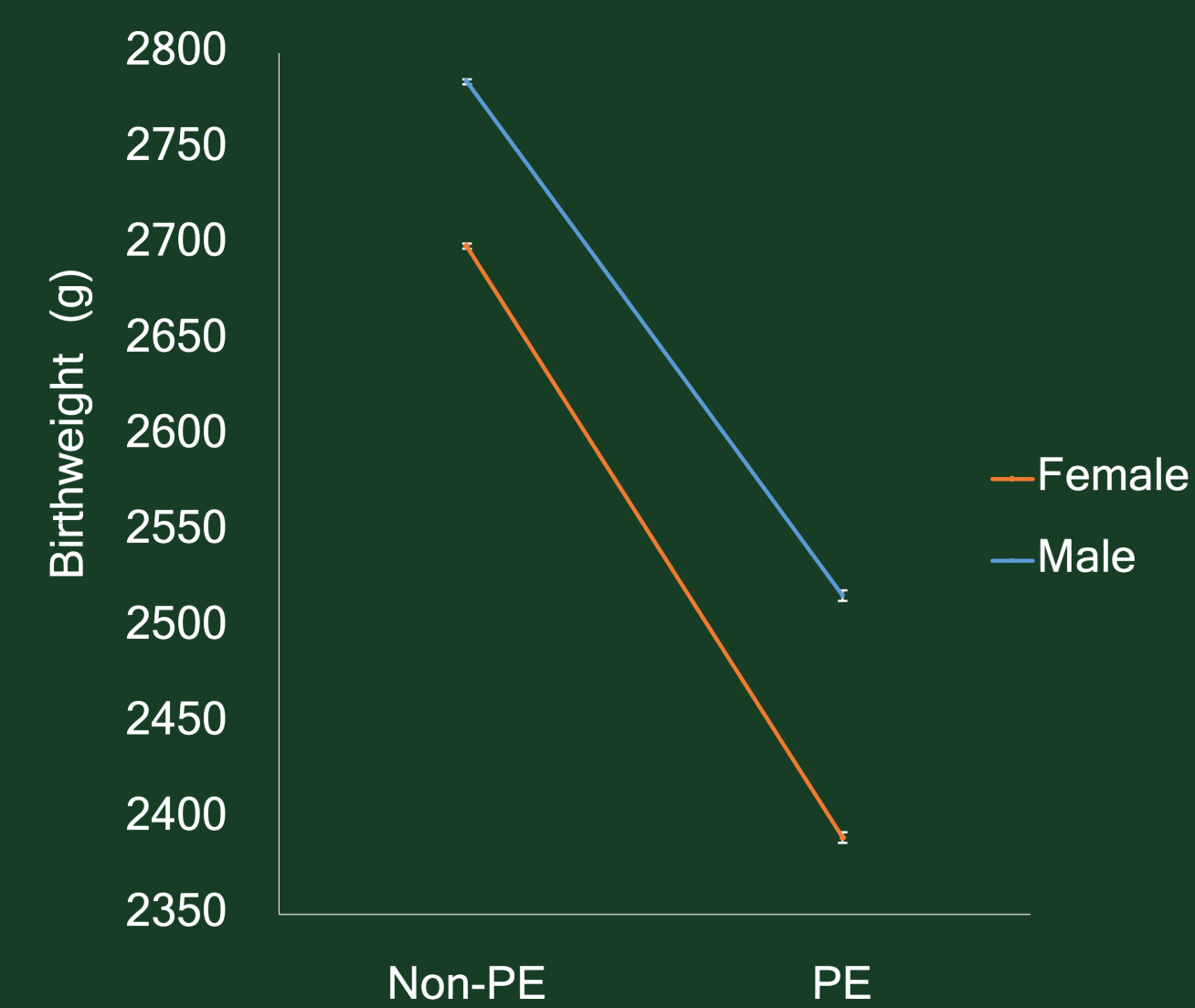


Table 1. Sex dependence of birthweight and p-value for the interaction, by year. Sex dependence was calculated by (Non-PE male BW - PE male BW) - (Non-PE female BW - PE female BW)

Year	Sex dependence	p value
1989	0.034	<0.0001
1990	0.016	0.03
1991	0.042	<0.0001
1995	0.024	0.0002
1996	0.027	<0.0001
1997	0.031	<0.0001
1998	0.013	0.03
1999	0.007	0.19
2000	0.016	0.003
2001	0.017	0.002
2002	0.014	0.01
2003	0.006	0.27

Table 2. Total mortality rate (in deaths/1000 fetuses) by presence of preeclampsia (PE) and sex, with each group split into high, medium, and low birthweight.

	Low	Medium	High
PE Female	4.717	0.965	0.801
PE Male	5.284	1.073	0.931
Non-PE Female	2.251	0.876	0.564
Non-PE Male	2.506	0.943	0.644

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