



Prenatal exposure pyrethroids and children's weight - PIPA Project

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Background/Aims:

Experimental studies suggest that fetal exposure to pyrethroids may have growth effects. However, epidemiologic investigations are scarce and inconsistent. Our data are from pilot study conducted in 2018, that is a precursor of a birth cohort that will be started at the School Maternity of the Federal University of Rio de Janeiro. We aimed to assess prenatal pyrethroids exposure and weight gain until six month at age.

Results:

Methods:

Figure 1: Population and data collection

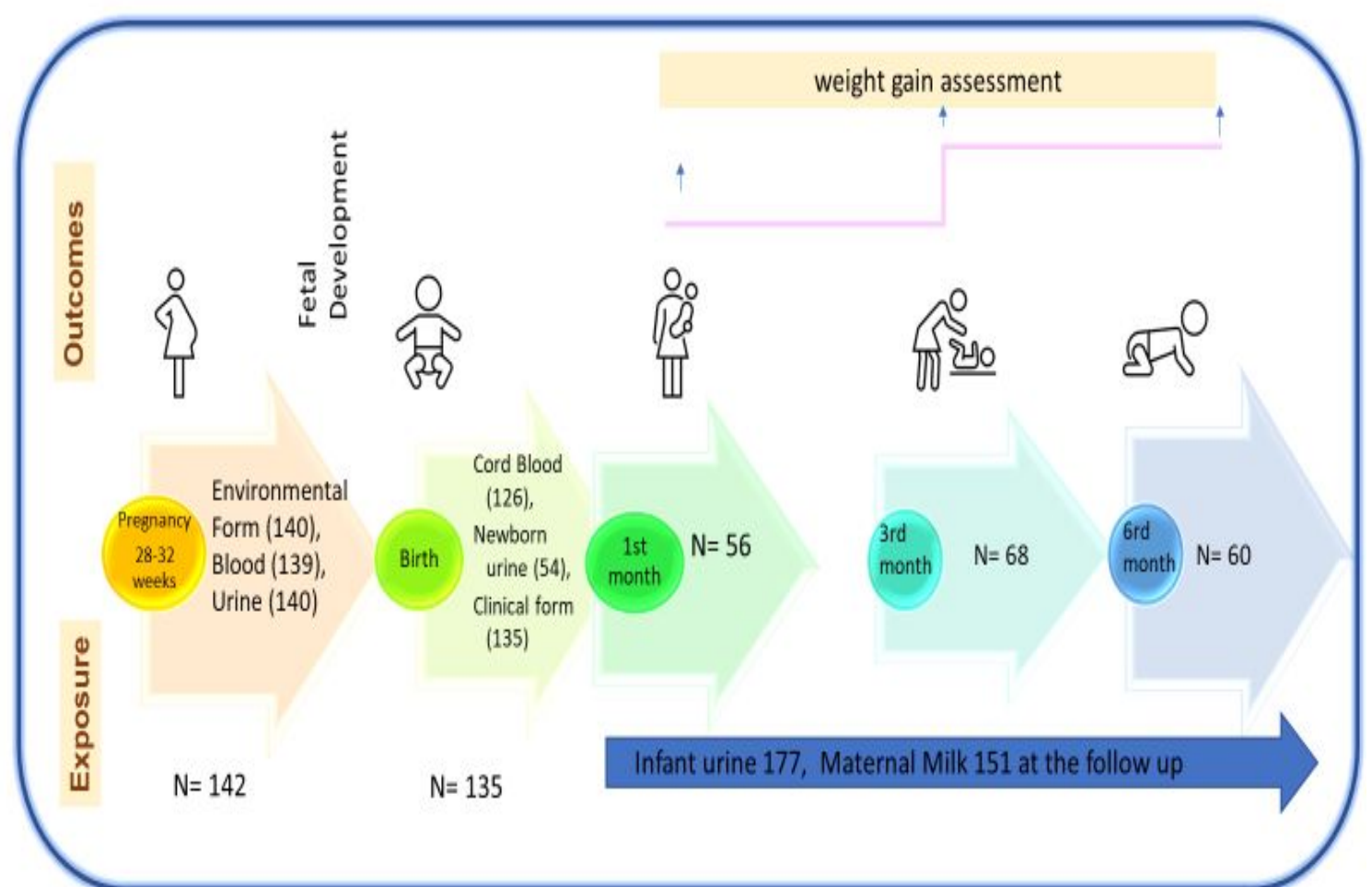


Figure 2: Population Characteristics

Birth Characteristics:	
Gender	- 57,3% (75) Boys; 43,7% (56) Girls
Birth weight	Median - 3,225 kg
Gestational age at delivery:	
	8,2% (12) Preterm;
	89,3% (109) Term;
	2,5% (3) Post term

Mother's sociodemographic and behavior Characteristics:	
Age	- average 27.99 years old (SD 8.05).
Schooling years	- 40.3% ≤ 10 years; 59.7 > 10 years
Education	- 78% had less than 11 years of education
Ethnicity	- 24.3% White; 75.7% Non-white
Family income	- Median US\$590
Alcohol consumption	- 45.2%
Tobacco exposure	- 46%

Table 2: Weight gain in the first trimester

Weight increase according WHO child growth standards	N*	%	RR	p
Low	14	28,5	0.72	0,74
Above	7	14,2	0.32	0.43
Appropriate	28	57,1	1	-
Total	49	100		

*children who attended the follow-up visit in the first trimester

Table 1: Detection rate and concentration of 3PBA-ng mL-1 in the urine of mothers and babies

Sample	N (analyzed)	Detection Rate (%)	Geometric Mean	Min	Max
Mothers	140	47,9	,304	,042	7,769
Babies at birth	34	23,5	,116	,066	,253
1st follow-up	26	19,2	,278	,062	1,082
2sd follow-up	50	28	,439	,064	1,009
3sd follow-up	56	21,4	,616	,256	1,225

References:

- 1- Asmus CIRF, Barbosa AP, Meyer A, et al. Rio Birth Cohort Study on Environmental Exposure and Childhood Development - PIPA Project. *Ann Glob Health*. 2020;86(1):59. Published 2020 Jun 11. doi:10.5334/aogh.2709.
- 2- Huang JY, Eskenazi B, Bornman R, Rauch S, Chevriier J. Maternal peripartum urinary pyrethroid metabolites are associated with thinner children at 3.5 years in the VHEMBE birth cohort (Limpopo, South Africa). *Environ Epidemiol*. 2018 Sep;2(3). pii: e026. doi: 10.1097/EE9.000000000000026. Epub 2018 Aug 21. PubMed PMID: 31106288; PubMed Central PMCID: PMC6516496.

Conclusions:

This is the first study in Brazil that analyze women pregnant and babies with environmental pollutants and, therefore there isn't previous parameter of compare with laboratorial data. The findings of this study suggest attention for the exposure to pyrethroids as well as new studies in this thematic.