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GYNAE SPECTRUM

Dear Doctor,

Greetings from Micro Labs. We are happy to bring you "Gynae Spectrum", which contains latest and interesting news in the field of Obstetrics and Gynaecology.

This issue contains:

- Maternal Diabetes & Risk of Childhood asthma in the newborn.
- Use of Biologics & pregnancy outcomes.

Should you require any article or, medical information, please feel free to contact us medicalservices@microlabs.in

Looking forward to your valuable feedback.

Best Regards,

Medical Team, Micro Labs Limited

Maternal Diabetes & Risk of Childhood asthma in the newborn.

Objective:

The study was conducted inorder to examine the influence of preexisting maternal type 2 diabetes (T2D) and gestational diabetes mellitus (GDM) on development of childhood asthma in the newborn

Method:

The study is a retrospective study on a birth cohort.
97,554 singletons who were born between 2007 & 2011 in hospitals from a single integrated healthcare system was enrolled for this study.
These children were followed up from their age 5 till December 31, 2017.
It was done using the electronic medical records.
Relative risks of developing childhood asthma when associated with maternal diabetes in utero were estimated.
This estimate was done by hazard ratios using Cox regression adjusting for potential confounders.

Results:

Amongst the enrolled children, there were 3119 children (3.2%) who were born to mothers with preexisting Type 2 Diabetes Mellitus.

There were 9836 (10.1%) children who were born to mothers with Gestational Diabetes Mellitus. Among these mothers who were diagnosed with GDM, 3380 (34.4%) were prescribed antidiabetic medication during pregnancy.

During a median of 7.6 years (IQR, 6.3-9.0 years) after birth, 15,125 children (15.5%) were diagnosed with asthma after the age of 5yrs.

Maternal diabetes interacted with maternal asthma history to affect child's asthma risk (P = .05).

Children who did not have a history of maternal asthma (n = 89 487), amongst them, the adjusted hazard ratios for childhood asthma were 1.21 (95% CI, 1.08-1.36; P < .001) when mother has a history of T2 DM.

The same was found to be 1.12 (95% CI, 1.01-1.25; P = .04) for children whose mothers had GDM during pregnancy & required antidiabetic medications.

It was 1.01 (95% CI, 0.93-1.10; P = .82) when mothers had a history of GDM, but did not require medications compared with no diabetes during pregnancy.

The corresponding hazard ratios were 1.53 (95% CI, 1.19-1.96; P < .001), 1.11 (95% CI, 0.65-1.46; P = .44), and 0.84 (95% CI, 0.66-1.08; P = .17) among children without maternal asthma (n = 8067).

Gestational age when GDM was diagnosed in the mother, didnot influence childhood asthma (P = .27).

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Associations between maternal diabetes during pregnancy and risk of asthma in offspring

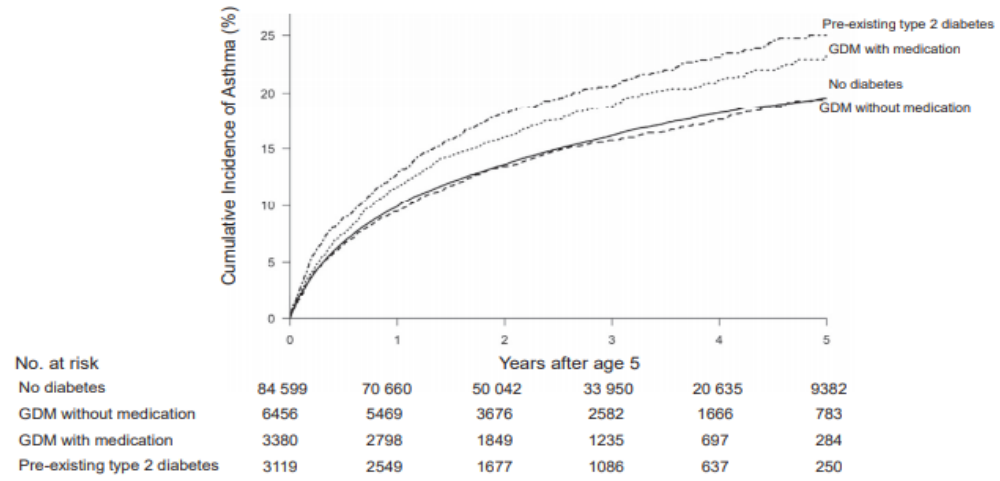
		Unadjusted		Multivariate adjusted 1*		Multivariate adjusted 2†	
Maternal diabetes	No. with asthma/total	HR (95% CI)	*P* value	HR (95% CI)	*P* value	HR (95% CI)	*P* value
None	12 949/84 599	1.00 (reference)		1.00 (reference)		1.00 (reference)	
Preexisting T2D	609/3119	1.43 (1.29-1.59)	<.001	1.32 (1.19-1.46)	<.001	1.23 (1.11-1.36)	<.001
GDM with medications	598/3380	1.23 (1.12-1.37)	<.001	1.17 (1.06-1.30)	.002	1.10 (0.99-1.21)	.07
GDM without medications	967/6456	0.99 (0.91-1.07)	.75	1.00 (0.92-1.08)	.93	0.98 (0.90-1.06)	.55

*Adjusted 1: variables included birth year (continuous), maternal age at delivery (continuous), parity, education, household income, maternal race/ethnicity, history of comorbidity other than diabetes or asthma, history of maternal asthma, smoking during pregnancy, and sex of the child.
†Adjusted 2: adjusted for potential confounders in adjusted 1 plus prepregnancy BMI and gestational weight gain.

Associations between maternal diabetes during pregnancy and risk of asthma in offspring stratified by maternal history of asthma status*

	Maternal history of asthma					
	No			Yes		
Maternal diabetes statuses	No. of kids with asthma/total	HR† (95% CI)	*P* value	No. of kids with asthma/total	HR† (95% CI)	*P* value
None	11 052/77 697	1.00 (reference)		1897/6902	1.00 (reference)	
Preexisting T2D	479/2735	1.21 (1.08-1.36)	<.001	130/384	1.53 (1.19-1.96)	<.001
GDM with medications	503/3066	1.12 (1.01-1.25)	.04	95/314	1.11 (0.85-1.46)	.44
GDM without medications	860/5989	1.01 (0.93-1.10)	.82	107/467	0.84 (0.66-1.08)	.17

*Maternal history of asthma significantly interacted with maternal diabetes during pregnancy to affect child's asthma risk ($P = .05$ testing for interaction).
†Adjusted for birth year (continuous), maternal age at delivery (continuous), parity, education, household income, maternal race/ethnicity, history of comorbidity other than diabetes or asthma, smoking during pregnancy, prepregnancy BMI, gestational weight gain and sex of the child.



No. at risk						
No diabetes	84 599	70 660	50 042	33 950	20 635	9382
GDM without medication	6456	5469	3676	2582	1666	783
GDM with medication	3380	2798	1849	1235	697	284
Pre-existing type 2 diabetes	3119	2549	1677	1086	637	250

Crude cumulative incidence of asthma by diabetic exposure in utero: preexisting T2D, GDM dispensed antidiabetic medications during pregnancy (GDM with medication), GDM not dispensed antidiabetic medications during pregnancy (GDM without medication), and no diabetes.

Conclusion:

The risk of childhood asthma was mainly seen incase of exposure to preexisting T2D, small for GDM requiring medication, and not increased for GDM not requiring medication during pregnancy, when compared to children with no history of maternal diabetes during pregnancy.

Martinez MP. et al.The Journal of Pediatrics. 2020 Jan 24.

IN FOCUS

Use of Biologics & pregnancy outcomes

Women on biologics during pregnancy due to inflammatory systemic diseases are not at increased risk of preterm birth or congenital abnormalities in their newborn has been suggested by a new meta-analysis.

No association between biologic use during pregnancy and outcomes of congenital anomalies, preterm deliveries and infant infections was found when combining findings from studies accounting for underlying disease

This study adds evidence on weighing the pros & cons of administering biologics during pregnancy.

24 studies were used in the meta-analysis. 19 of them examined TNF inhibitors and 5 dealt with other biologics.Meta-analyses of crude risk estimates resulted in pooled odds ratios (OR) for the association of biologic use during pregnancy with congenital anomalies, preterm birth and low birth weight.

Researchers looked at other perinatal outcomes and found no association between use of biologics during pregnancy and stillbirth or infant infections.

Uncontrolled disease prior to conception and disease flares during pregnancy pose the biggest risk to the outcome of the pregnancy.

This study is about biological exposure but it should be kept in mind that most of the studies were on the TNF inhibitors. Further studies should be conducted to seek additional information on other classes of biological drugs.

https://bit.ly/3e1YF7c Rheumatology, online March 2, 2020