The Obstetric Implications of **Diabetes** & **Diabesity** in Malaysia

National Obstetrics Registry (NOR)

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BACKGROUND REVIEW

- Diabetes is highly prevalent in Malaysia

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- Obesity is a modern epidemic
- The implications of diabetes and obesity in pregnancy are significant
- Implications of **diabesity in pregnancy?**

OBJECTIVE

National Obstetrics Registry (NOR)

- To compare the obstetric implications of diabetes and diabesity

METHODS

- Cross sectional retrospective cohort study

National Obstetrics Registry (NOR)

- Dataset is from the National Obstetric Registry of Malaysia

  (*Fourteen major tertiary hospitals in nationwide*)

- Three year study period from 1st January 2010 till 31st December 2012

DEFINITIONS

Inclusion criteria

- **Pre-gestational** DM
- Hyperglycaemia in pregnancy **(WHO)**
- Obesity – Booking **BMI>30kg/m²**
- **Diabesity – Pre-gestational DM and Obesity**

Exclusion criteria

- GDM were excluded
- Booking >18 weeks of pregnancy

METHODS

Sample size
399,274 pregnant mothers

Diabetes
34,619 pregnant mothers

Diabesity
17,770 pregnant mothers

Outcome Variables

Primary outcomes

- Fetal macrosomia
- Caesarean section rates
- Stillbirths

Secondary outcomes

- Shoulder dystocia
- Primary Post partum haemorrhage

Adjusted for maternal age, parity & ethnicity

STATISTICAL ANALYSIS

- **Multivariate analysis** using logistic regressions

- **Crude and adjusted odds ratio** with respective 95% confidence interval

- **Paired sample t-test** to compare the mean difference between odds ratio

RESULTS

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DIABESITY IS COMMON

- Incidence of diabesity in pregnancy – **4.5%**

- Most prevalent among **Indians**

- Most common age group **35-39** years of age

FETAL MACROSOMIA

Condition		Fetal macrosomia					
		Yes		No		Crude OR (95% CI)	P value
		No	%	No	%		
Diabetes	Yes	1,307	3.7	33,743	96.3	**3.47** (3.25-3.69)	**<0.001**
	No	4,024	1.1	360,200	98.9	1.00 (ref)	
Diabesity	Yes	780	6.7	10,867	93.3	**6.04** (5.59 -6.53)	**<0.001**
	No	4,551	1.2	383,076	98.8	1.00 (ref)	

P value based on simple logistic regression , OR Odds Ratio

CAESAREAN SECTION

Condition		Caesarean Section					
		Yes		No		Crude OR (95% CI)	P value
		No	%	No	%		
Diabetes	Yes	12,542	36.2	22,077	63.8	**1.90** (1.86-1.95)	**<0.001**
	No	82,543	23.0	276,599	77.0	1.00 (ref)	
Diabesity	Yes	5,357	46.6	6,146	53.4	**2.84** (2.74 -2.95)	**<0.001**
	No	89,728	23.5	292,530	76.5	1.00 (ref)	

P value based on simple logistic regression , OR Odds Ratio

STILLBIRTH

Condition		Stillbirth					
		Yes		No		Crude OR (95% CI)	P value
		No	%	No	%		
Diabetes	Yes	319	0.9	34,410	99.1	**1.17** (1.04-1.31)	0.008
	No	2,836	0.8	357,914	99.2	1.00 (ref)	
Diabesity	Yes	136	1.2	11,418	98.8	**1.50** (1.26 -1.79)	<0.001
	No	3,019	0.8	380,906	99.2	1.00 (ref)	

P value based on simple logistic regression , OR Odds Ratio

PRIMARY PPH

Condition		Primary PPH					
		Yes		No		Crude OR (95% CI)	P value
		No	%	No	%		
Diabetes	Yes	356	1.0	34,694	99.0	**2.24** (1.99-2.51)	<0.001
	No	1,663	0.5	362,561	99.5	1.00 (ref)	
Diabesity	Yes	140	1.2	11,507	98.8	**2.50** (2.10 -2.97)	<0.001
	No	1,879	0.5	385,748	99.5	1.00 (ref)	

P value based on simple logistic regression , OR Odds Ratio

SHOULDER DYSTOCIA

Condition		Shoulder dystocia					
		Yes		No		Crude OR (95% CI)	P value
		No	%	No	%		
Diabetes	Yes	193	0.6	34,857	99.4	**3.56** (3.03-4.20)	<0.001
	No	565	0.2	363,659	99.8	1.00 (ref)	
Diabesity	Yes	74	0.6	11,573	99.4	**3.62** (2.84 -4.60)	<0.001
	No	684	0.2	386,943	99.8	1.00 (ref)	

P value based on simple logistic regression , OR Odds Ratio

CONCLUSION

- Combination of diabetes & obesity has far greater obstetrics complications

- More prevalent then what is perceived!

- Risk of fetal macrosomia & caesarean section is extremely significant

STRENGTH OF STUDY

- Large sample size

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- Adequately powered

LIMITATIONS

- Retrospective study

National Obstetrics Registry (NOR)

- Based on a single registry

RECOMMENDATIONS

- Better awareness

- Urgent need of a aggressive & holistic approach

- Global Initiative & National Health Policy & Declaration

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THANK YOU