ASIAN BMI CLASSIFICATIONS: OBSTETRICS IMPLICATIONS IN MALAYSIA

Muniswaran Ganeshan[1], HY Voon[1], Haris Suharjono[1], Shahrul Aiman Soelar[2], Adam Bin Bujang[2], Shamala Devi[2],

1 - Sarawak General Hospital, 2 – CRC National

OBJECTIVES

Body Mass Index (BMI) is an essential risk stratification tool in pregnancy. It has significant implications in terms of pregnancy outcomes.

Traditionally women have been risk stratified based on universal WHO classifications. A better representation would be a population specific classification. Although specific classifications for Malaysians remain unstudied, the closest measure would be the Asian classifications.

The objective of this study is to evaluate the obstetrics implications of the Asian classifications in Malaysia as compared to the WHO classifications.

METHODS

This is a retrospective cohort study. The study period was from 1st January 2011 till 31st December 2011. All the patients registered in the National Obstetric Registry (NOR) from Hospital Umum Sarawak, Hospital Kuala Lumpur and Hospital Tengku Fauziah during the study period were included. A total of 25686 patients were analyzed. Specific variables were systematically extracted. The pregnancy outcomes were compared using both the WHO and Asian classifications. The results were analyzed using SPSS 20.

RESULTS

Table 1 : BMI and spontaneous vaginal delivery

WHO classifications				Asian classifications			
BMI (kg/m^2)	OR	95% CI	P value	BMI (kg/m^2)	OR	95% CI	P value
			<0.001				<0.001
< 18.5	1.16	1.11-1.21		<16.0	1.15	1.05-1.26	
18.5-24.9	1.00	Reference		16.0-18.4	1.11	1.05-1.16	
25.0-29.9	0.79	0.76-0.81		18.5-22.9	1.00	Reference	
30.0-34.9	**0.55**	**0.53-0.58**		23.0-27.4	0.84	0.82-0.87	
35.0-39.9	0.40	0.38-0.43		**27.5-32.5**	**0.65**	**0.63-0.67**	
40.0 or more	0.32	0.29-0.35		32.6-37.5	0.44	0.42-0.47	
				>37.5	0.33	0.31-0.36	

Table 2 : BMI and successful VBAC (vaginal birth after caesarean section)

WHO classifications				Asian classifications			
BMI (kg/m^2)	OR	95% CI	P value	BMI (kg/m^2)	OR	95% CI	P value
			<0.001				<0.001
< 18.5	0.76	0.71-0.82		<16.0	0.70	0.60-0.82	
18.5-24.9	1.00	Reference		16.0-18.4	0.84	0.77-0.91	
25.0-29.9	1.41	1.35-1.47		18.5-22.9	1.00	Reference	
30.0-34.9	**1.93**	**1.83-2.04**		23.0-27.4	1.31	1.25-1.38	
35.0-39.9	2.71	2.49-2.95		**27.5-32.5**	**1.74**	**1.65-1.83**	
40.0 or more	3.17	2.79-3.61		32.6-37.5	2.45	2.29-2.63	
				>37.5	3.29	2.98-3.63	

Table 3 : BMI and Pre-gestational Diabetes

WHO classifications				Asian classifications			
BMI (kg/m^2)	OR	95% CI	P value	BMI (kg/m^2)	OR	95% CI	P value
			<0.001				<0.001
< 18.5	0.66	0.61-0.72		<16.0	0.77	0.65-0.92	
18.5-24.9	1.00	Reference		16.0-18.4	0.72	0.66-0.80	
25.0-29.9	1.74	1.66-1.82		18.5-22.9	1.00	Reference	
30.0-34.9	**2.66**	**2.51-2.81**		23.0-27.4	1.57	1.49-1.66	
35.0-39.9	3.58	3.29-3.90		**27.5-32.5**	**2.39**	**2.26-2.53**	
40.0 or more	3.78	3.31-4.32		32.6-37.5	3.55	3.30-3.82	
				>37.5	4.34	3.92-4.81	

Table 4 : BMI and Shoulder Dystocia

WHO classifications				Asian classifications			
BMI (kg/m^2)	OR	95% CI	P value	BMI (kg/m^2)	OR	95% CI	P value
			0.027				0.022
< 18.5	0.45	0.18-1.13		<16.0	0.51	0.07-3.78	
18.5-24.9	1.00	Reference		16.0-18.4	0.55	0.19-1.58	
25.0-29.9	1.37	0.88-2.13		18.5-22.9	1.00	Reference	
30.0-34.9	1.89	1.11-3.22		23.0-27.4	1.59	0.97-2.62	
35.0-39.9	**2.07**	**0.88-4.85**		**27.5-32.5**	**2.12**	**1.26-3.59**	
40.0 or more	0.95	0.13-6.90		32.6-37.5	2.21	1.06-4.58	
				>37.5	1.23	0.29-5.19	

CONCLUSIONS

Population specific BMI are more accurate prognostic indicators.

A BMI greater then **27.5**kg/m^2 is more significant in terms of obstetrics outcomes in Malaysia. It is associated with reduced success rates of a spontaneous vaginal delivery and vaginal birth after caesarean section. It is also associated with increased risk of pre-gestational diabetes and shoulder dystocia.

Although the exact values for the unique population and specific races in Malaysian remains unknown for now, it is time to change the way we practice by using Asian classifications rather than basing it on a universal WHO classifications.

This should be the ideal pre-pregnancy targets in our quest towards improving women's reproductive health as we endeavor towards achieving our Millennium Development Goal 4 and 5.

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