MATSUDA INDEX IN CORRELATION WITH CLINICAL INDICATORS OF INSULIN RESISTANCE IN CHILDREN AND ADOLESCENTS

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BACKGROUND

Obesity-related insulin resistance is present in obese children and Matsuda index is a method proposed to evaluate insulin resistance, using data obtained from the oral glucose tolerance test (OGTT).

To investigate whether the clinical indicators of family history of obesity and / or Type II diabetes, acanthosis nigricans, and increased waist circumference are associated with insulin resistance, as calculated by the Matsuda index and if they could be used as selection markers for patients to undergo OGTT. Moreover, the correlation of insulin resistance with the coexistence of metabolic syndrome.

METHODS

MATSUDA INDEX

	b overweight and o	bese children (47	boys and 48 girls)				Mats	uda index		
with mean ag	ge 10.7 ±2.2 years w	vere analyzed.					Mean	SD	P S	tudent's t-test
Student's t-	tests were used f	or the compariso	on of means and	Gender	B	oys	3.66	1.97		NS
Pearson co	orrelation coefficie	ents were used	to explore the		G	irls	3.13	1.85		
association	of two continuous v	variables.		History o	of N	0	3.49	1.88		NS
	REC			T2DM	Ye	es	3.19	1.99		
				History o	of N	0	3.38	2.04		NS
 Insulin resis 	Insulin resistance was found in 39.1% of the children.					es	3.36	1.84		
 The mean MATSUDA index was 3.4 (SD=1.9). 					N	0	3.83	1.98		0.01
 The mean AUC for glucose was 14211.3 (SD=2016.5) and for insulin 					Y	es	2.81	1.69		
13484.2 (SD:	=11985.3).			Acanthos	sis N	0	3.77	1.93		0.007
 Matsuda ind 	dex was significan	tly lower in case	s with acanthosis	Nigricans	s Ye	es	2.64	1.71		
nigricans (r	0=0.007). in those	with metabolic	syndrome and in		N	0	4.55	1.54		<0.001
nuborty			Cynaronio and m	HOMA>2	.5 Ye	es	1.57	0.52		
puberty.				Met. Syn	dr. Ye	es	2.41	1.66		0.015
 Matsuda i 	index was sign	ificantly correla	ted with waist		N	0	3.89	1.91		
circumferen	ce (r=-0.40, p=0.006	5).				INS	ULIN F	RESISTAN	CE	
 The proport 	ion of those with in	sulin resistance w	vas similar in boys	Insulin resistant<2.5						
and girls and greater in puberty.						Nc		Yes	P Pea	arson's x ² test
 AUC for insulin was significantly greater in cases with acanthosis 						Ν	%	N %		
nigrioono (n=0.007) or motobolio ovndromo (n=0.006)										
nigricane (n	-0 007) or motaboli	c syndrome (n=0 0	N6)	Gender	Boys	29	64.4	16 35.0	6	NS
nigricans (p	=0.007) or metabolic	c syndrome (p=0.0	06).	Gender	Boys Girls	29 27	64.4 57.4	16 35.0 20 42.0	6 6	NS
nigricans (page 10)Waist circun	=0.007) or metabolic nference was also p	c syndrome (p=0.0 predictive for AUC	06). for insulin (r=0.30,	Gender Puberty	BoysGirlsNo	29 27 38	64.4 57.4 73.1	16 35.0 20 42.0 14 26.9 00 55.0	6 6 9	NS 0.006
 nigricans (page 10) Waist circunt p=0.044). 	=0.007) or metabolic nference was also p	c syndrome (p=0.0 predictive for AUC	06). for insulin (r=0.30,	Gender Puberty	BoysGirlsNoYes	29 27 38 18	64.4 57.4 73.1 45.0	16 35.0 20 42.0 14 26.9 22 55.0	6 6 9 0	NS 0.006
 nigricans (page 1) Waist circun p=0.044). 	=0.007) or metabolic nference was also p	c syndrome (p=0.0 predictive for AUC	06). for insulin (r=0.30, HOMA-IR	Gender Puberty	BoysGirlsNoYes	29 27 38 18	64.4 57.4 73.1 45.0	16 35.0 20 42.0 14 26.9 22 55.0	6 6 9 0 0	NS 0.006
 nigricans (page 1) Waist circun p=0.044). 	=0.007) or metabolic nference was also p	c syndrome (p=0.0 predictive for AUC	06). for insulin (r=0.30, HOMA-IR	Gender Puberty	BoysGirlsNoYes	29 27 38 18	64.4 57.4 73.1 45.0	 16 35.0 20 42.0 14 26.9 22 55.0 AUC (insulin)	6 6 9 9 0 0	NS 0.006
nigricans (provide the second	=0.007) or metabolic nference was also p	c syndrome (p=0.0 predictive for AUC WC 0.09	06). for insulin (r=0.30, HOMA-IR 0.50	Gender Puberty	BoysGirlsNoYes	29 27 38 18	64.4 57.4 73.1 45.0 Mea	16 35.0 20 42.0 14 26.9 22 55.0 AUC (insulin) n SD	6 6 9 0 0 7	NS 0.006 • Student's t-test
nigricans (p. • Waist circun p=0.044).	=0.007) or metabolic nference was also p	c syndrome (p=0.0 predictive for AUC 0.09 0.550	06). for insulin (r=0.30, HOMA-IR 0.50 <0.001	Gender Puberty	BoysGirlsNoYes	29 27 38 18	64.4 57.4 73.1 45.0	16 35.0 20 42.0 14 26.9 22 55.0 AUC (insulin) n SD 5.46 7	6 9 9 0 F 498.02	NS 0.006 • Student's t-test NS
 nigricans (particular) Waist circular) p=0.044). AUC (glucose) AUC (insulin) 	=0.007) or metabolic nference was also p r P r	wc 0.09 0.550 0.30	06). for insulin (r=0.30, HOMA-IR 0.50 <0.001 0.71	Gender Puberty History of the second	BoysGirlsNoYesOf	29 27 38 18 8	64.4 57.4 73.1 45.0	16 35.0 20 42.0 14 26.9 22 55.0 AUC (insulin) In SD 5.46 7 5.72 16	6 9 9 0	NS 0.006 • Student's t-test NS
nigricans (p. • Waist circun p=0.044). AUC (glucose) AUC (insulin)	=0.007) or metabolic nference was also p r P r P	c syndrome (p=0.0 bredictive for AUC 0.09 0.550 0.30 0.044	06). for insulin (r=0.30, HOMA-IR 0.50 <0.001 0.71 <0.001	Gender Puberty History T2DM History	Boys Girls No Yes i	29 27 38 18 No Yes No	64.4 57.4 73.1 45.0 Mea 1187 1634	16 35.0 20 42.0 14 26.9 22 55.0 AUC (insulin) AUC (insulin) 5.46 7 5.72 16 5,04 15	6	NS 0.006 Student's t-test NS
nigricans (p. • Waist circun p=0.044). AUC (glucose) AUC (insulin)	=0.007) or metabolic nference was also p r P r P	c syndrome (p=0.0 c redictive for AUC 0.09 0.550 0.30 0.044	06). for insulin (r=0.30, HOMA-IR 0.50 <0.001 0.71 <0.001	Gender Puberty History T2DM History o besity	Boys Girls No Yes i	29 27 38 18 No Yes No	64.4 57.4 73.1 45.0 Mea 1187 1634 148	16 35.0 20 42.0 14 26.9 22 55.0 AUC (insulin) n SD 5.46 7 5.72 16 5,04 15 0.19 8	6 9 9 0 7 4 9 8 7 9 0 8 4 9 1 1 1 1 1 1 1 1 1 1 1 1 1	NS 0.006 Student's t-test NS NS
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	Ρ	0.044	<0.001					
CONCLUSION								

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All authors declare no financial or other conflict of interest.

