

Supplemental Table. Comparison of reference intervals (RIs) for liver function tests with other studies

Analyte	Methodology	This study				National standard [20-22]				Canada [23]			Denmark [24]			Asmara,Eritrea [25]			RCV(%)	
		Age	M	F	OOR N(%)	Methodology	M	F	Relative deviation(%) (M / F)	Methodology	M	F	Relative deviation (%) (M / F)	M	F	Relative deviation (%) (M / F)	M	F		Relative deviation (%) (M / F)
AST (U/L)	UV-MDH	60-89	13.5-40.3		285 (8.0%)	Rate method	15-45	13-40	(11.1, 11.7 / 3.7, 0.7)	Enzymatic Multiple point rate	18-39		(33.3, 3.2)	N/A	N/A	-	13.8-33.2		(2.2, 17.6)	31.6
ALT (U/L)	UV-LDH	60-69	8.7-48.5		181 (5.1%)	Rate method			(3.4, 23.7 / 19.5, 7.2)	Enzymatic Multiple point rate	20-62	16-44	(129.9, 27.8 / 83.9, 9.3)			(96.6, 52.8 / 64.4, 1.9)	9.0-35.4		(3.4, 27.0)	38.8
		70-79	8.2-42.7				9-60	7-45	(9.8, 40.5 / 14.6, 5.4)				(143.9, 45.2 / 95.1, 3.0)	17.1-74.1	14.3-47.6	(108.5, 73.5 / 74.4, 11.5)			(9.8, 17.1)	
		80-89	6.4-42						(40.6, 42.9 / 9.4, 7.1)				(212.5, 47.6 / 150, 4.8)			(167.2, 76.4 / 76.4, 13.3)			(40.6, 15.7)	
GGT (U/L)	I-γ-glutamyl-3-carboxy-4-nitranilide	60-69	9.1-82.1		297 (8.4%)	Rate method	10-60	7-45	(9.9, 26.9)	Enzymatic Multiple point rate	13-109	10-54	(42.9, 32.8)	N/A	N/A	-	N/A	N/A	-	31.3
		70-79	8.5-84.6						(17.6, 29.1)				(52.9, 28.8)							
		80-89	10.5-74.6						(4.8, 19.6)				(23.8, 46.1)							
		60-89	7.2-61.6						(2.8, 26.9)				(38.9, 12.3)							
ALP (U/L)	AMP buffer	60-89	38.3-99.3	41.7-115.8	369 (10.4%)	Rate method	45-125	50-135	(17.5, 25.9 / 19.9, 16.7)	Multiple point rate	50-116	46-122	(30.5, 16.8 / 10.3, 5.4)	41.1-115.3		(7.3, 16.1 / 1.4, 0.4)	55.4-156.0		(44.6, 57.1 / 32.9, 34.7)	17.2
TP (g/L)	Biuret reaction	60-69	67.1-82.4		20 (0.6%)	Biuret method	65-85		(3.1,3.2)	Colorimetry	65-78		(3.1, 5.3)	N/A		-	N/A	N/A	-	8.2
		70-89	66.4-82.3						(2.1, 3.3)				(2.1, 5.2)							
ALB (g/L)	Bromocresol green	60-69	39.0-47.5		312 (8.8%)	Bromocresol green	40-55		(2.6, 15.8)	Bromocresol green	42-50		(7.1, 5.3)	35.4-44.5		(9.2, 6.3)	39-52	41-55	(0, 9.5 / 5.1, 15.8)	8.2
		70-79	38.0-46.7						(5.3, 17.8)				(10.5, 7.1)	33.5-42.8		(11.8, 8.4)			(2.6, 11.3 / 7.9, 17.8)	
		80-89	37.5-45.7						(6.7, 20.4)				(12.0, 9.4)	(10.7, 6.3)				4.0, 13.8 / 9.3, 20.4)		
TBIL (μmol/L)	DCA	60-89	≤ 31.6	≤ 23.6	732 (20.6%)	Diazonation	≤ 26.0	≤ 21.0	(17.7 / 11.0)	Colorimetry	1.7-20.5	1.7-17.1	(35.1 / 27.5)	4.0-22.2		(29.7 / 5.9)	6.8-28.9	6.8-20.5	(8.5 / 13.1)	63.1
DBIL (μmol/L)	DCA	60-79	≤ 6.9		44 (1.2%)	Diazonation	≤ 8.0		15.9	-	N/A	N/A	-	N/A	N/A	-	0-5.1	0-4.3	26.1	114.1
		80-89	≤ 8.0						0										36.1	
		60-69	≤ 4.4						81.8										2.3	
		70-79	≤ 4.8						66.7										10.4	
		80-89	≤ 5.8						37.9										25.9	

AST - aspartate aminotransferase. ALT - alanine aminotransferase. GGT - gamma-glutamyltransferase. ALP - alkaline phosphatase. TP - total protein. ALB – albumin. TBIL - total bilirubin. DBIL - direct bilirubin. OOR – out of range. RCV – reference change values. M - males. F - females.