



## Supplementary Material

# Epidemiological and Clinical Correlates of Leukemia Ascertained in a Multiethnic Cohort of Pakistan

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**Supplementary Table I. General characteristics of all leukemia patients (n=616) and control samples (n=884) collected from selected facilities.**

Variable	Patients N (%)	Controls N (%)	Total	Variable	Patients N (%)	Controls N (%)	Total
<b>Data present</b>				<b>Family history</b>			
Yes	566 (91.88)	830 (93.89)	1396	Yes	34 (5.52)	12 (1.36)	46
No	50 (8.12)	54 (6.11)	104	No	582 (94.48)	872 (98.64)	1454
Total	616 (100)	884 (100)	1500	Total	616 (100)	884 (100)	1500
<b>Gender</b>				<b>Family type</b>			
Male	411 (66.72)	623 (70.48)	1034	Nuclear	109 (17.69)	162 (18.33)	271
Female	205 (33.28)	261 (29.52)	466	Extended	214 (34.74)	271 (30.66)	485
Total	616 (100)	884 (100)	1500	Unavailable	293 (47.56)	451 (51.02)	744
<b>Blood Group</b>				Total	616 (100)	884 (100)	1500
A	59 (9.58)	49 (5.54)	108	<b>Ethnicity</b>			
B	83 (13.47)	63 (7.13)	146	Pathan	354 (57.47)	289 (32.69)	643

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Variable	Patients N (%)	Controls N (%)	Total	Variable	Patients N (%)	Controls N (%)	Total
AB	30 (4.87)	18 (2.04)	48	Punjabi	191 (31.01)	494 (55.88)	685
O	54 (8.77)	54 (6.11)	108	Others	45 (7.31)	56 (6.33)	101
Unavailable	390 (63.31)	700 (79.19)	1090	Unavailable	26 (4.22)	45 (5.09)	71
Total	616 (100)	884 (100)	1500	Total	616 (100)	884 (100)	1500
<b>Rh- Factor</b>				<b>M. Status</b>			
+ve	206 (33.44)	166 (18.78)	372	Married	151 (24.51)	462 (52.26)	613
-ve	20 (3.25)	18 (2.04)	38	Unmarried	27 (4.38)	162 (18.33)	189
Unavailable	390 (63.31)	700 (79.19)	1090	Below marital Age <sup>b</sup>	330 (53.57)	257 (29.07)	587
Total	616 (100)	884 (100)	1500	Unavailable	108 (17.53)	3 (0.34)	111
<b>Age Group</b>				<b>Education<sup>c</sup></b>			
<1	7 (1.14)	10 (1.13)	17	Educated	275 (44.64)	694 (78.51)	969
1.1-5	116 (18.83)	74 (8.37)	190	No formal education	105 (17.05)	98 (11.09)	203
5.1-15	171 (27.76)	117 (13.24)	288	Inadmissible	103 (16.72)	58 (6.56)	161
15.1-39	148 (24.03)	503 (56.9)	651	Unavailable	133 (21.59)	34 (3.85)	167
39.1 and >	152 (24.68)	180 (20.36)	332	Total	616 (100)	884 (100)	1500
Unavailable	22 (3.57)	0 (0)	22	Level of education			
Total	616 (100)	884 (100)	1500	Primary	139 (22.56)	155 (17.53)	294
<b>BMI/Percentile (children)</b>				Secondary	114 (18.51)	297 (33.60)	411
Normal	128 (20.78)	210 (23.76)	338	Graduation	22 (3.57)	242 (27.37)	264
Overweight	152 (24.68)	467 (52.83)	619	No Formal Education	105 (17.05)	98 (11.09)	203
Underweight	123 (19.97)	152 (17.19)	275	Inadmissible	103 (16.72)	58 (6.56)	161
Unavailable	213 (34.58)	55 (6.22)	268	Unavailable	133 (21.59)	34 (3.85)	167
Total	616 (100)	884 (100)	1500	Total	616 (100)	884 (100)	1500

# Out of the total 616 patients, the data 22 were excluded in the subsequent analysis. BMI, body mass index.

<sup>a</sup> Weight status is derived from the BMI /Percentile (in case of children). <sup>b</sup> Below marital age (legal age to for marriage in Pakistan is 18 years old; Child Marriage Restraint Act, 1929 and Muslim Family Laws Ordinance, 1961). <sup>c</sup> Assessed by asking What is the highest grade of school completed.

**Supplementary Table II. Risk factors distribution for leukemia patients (n=616) and controls (n=884).**

Variable	Patients N (%)	Controls N (%)	Total	Variable	Patients N (%)	Controls N (%)	Total
<b>Diet <sup>a</sup></b>				<b>Tobacco use</b>			
Balanced	367 (59.58)	722 (81.67)	1089	Yes	189 (30.68)	233 (26.36)	422
Poor	150 (24.35)	126 (14.25)	276	No	329 (53.41)	639 (72.29)	968
Unavailable	99 (16.07)	36 (4.07)	135	Unavailable	98 (15.91)	12 (1.36)	110
Total	616 (100)	884 (100)	1500	Total	616 (100)	884 (100)	1500
<b>Microwave use</b>				<b>Area <sup>d</sup></b>			
Yes	53 (8.6)	294 (33.26)	347	Rural	265 (43.02)	252 (28.51)	517
No	406 (65.91)	573 (64.82)	979	Urban	63 (10.23)	176 (19.91)	239
Unavailable	157 (25.49)	17 (1.92)	174	Unavailable	288 (46.75)	456 (51.58)	744
Total	616 (100)	884 (100)	1500	Total	616 (100)	884 (100)	1500
<b>Water Type</b>				<b>Environment <sup>e</sup></b>			
Ground water	240 (38.96)	241 (27.26)	481	Clean	124 (20.13)	302 (34.16)	426
Surface water	71 (11.53)	139 (15.72)	210	Polluted	45 (7.31)	127 (14.37)	172
Treated Water <sup>b</sup>	11 (1.79)	47 (5.32)	58	Unavailable	447 (72.56)	455 (51.47)	902
Unavailable	294 (47.73)	457 (51.7)	751	Total	616 (100)	884 (100)	1500
Total	616 (100)	884 (100)	1500	<b>Parental consanguinity</b>			
<b>Fuel</b>				CU <sup>f</sup>	202 (32.79)	193 (21.83)	395
Wood	287 (46.59)	206 (23.3)	493	NCU	299 (48.54)	610 (69)	909
Natural Gas	233 (37.82)	664 (75.11)	897	Unavailable	115 (18.67)	81 (9.16)	196
Unavailable	96 (15.58)	14 (1.58)	110	Total	616 (100)	884 (100)	1500
Total	616 (100)	884 (100)	1500	<b>Parity</b>			
<b>Carbonated drinks</b>				1	87 (14.12)	125 (14.14)	212
Yes	336 (54.55)	519 (58.71)	855	2	53 (8.6)	99 (11.2)	152
No	180 (29.22)	350 (39.59)	530	3	35 (5.68)	68 (7.69)	103
Unavailable	100 (16.23)	15 (1.7)	115	4	34 (5.52)	43 (4.86)	77
Total	616 (100)	884 (100)	1500	5	23 (3.73)	37 (4.19)	60
<b>Perfume Use <sup>c</sup></b>				6->6	39 (6.33)	40 (4.52)	79
Yes	264 (42.86)	620 (70.14)	884	Unavailable	345 (56.01)	472 (53.39)	817
No	249 (40.42)	248 (28.05)	497	Total	616 (100)	884 (100)	1500
Unavailable	103 (16.72)	16 (1.81)	119				
Total	616 (100)	884 (100)	1500				

# Out of the total 616 patients, the data 22 were excluded in the subsequent analysis, the percentages for missing data were excluded for subsequent analysis. <sup>a</sup>Assessed by asking Enlist the dietary item you on consume weekly basis?. <sup>b</sup> Treated Water; water purified by physical (filtration) or chemical techniques. <sup>c</sup> Perfume; Any form of liquid (perfume, body spray, attar) or powdered perfume. <sup>d</sup> Rural area. Villages and countryside area with diluted population and less infrastructures and services, Urban area; big town and cities with dense population and advanced infrastructure. <sup>e</sup> Clean environment; No noise, traffic and physical form of pollutants, Polluted environment; noise, heavy traffic, physical pollutants being encountered in routine. <sup>f</sup> CU, consanguineous union; NCU, non-consanguineous union.

**Supplementary Table III. Hematological attributes of the leukemia patients (n=616) and controls (n=884).**

<b>Variable</b>	<b>Patients N (%)</b>	<b>Controls N (%)</b>	<b>Total</b>	<b>Variable</b>	<b>Patients N (%)</b>	<b>Controls N (%)</b>	<b>Total</b>
<b>WBC Status</b>				<b>Lymphocytes (%)</b>			
Normal	182 (31.99)	618 (69.91)	800	Normal	135 (21.92)	544 (61.54)	679
Increment	228 (40.07)	84 (9.5)	312	Increment	152 (24.68)	96 (10.86)	248
Decrement	159 (27.94)	33 (3.73)	192	Decrement	160 (25.97)	93 (10.52)	253
Unavailable	0 (0)	149 (16.86)	196	Unavailable	169 (27.44)	151 (17.08)	320
Total	569 (100)	884 (100)	1500	Total	616 (100)	884 (100)	1500
<b>RBC Status</b>				<b>Neutrophils (%) Status</b>			
Normal	175 (28.41)	510 (57.69)	685	Normal	119 (19.32)	533 (60.29)	652
Increment	12 (1.95)	145 (16.4)	157	Increment	33 (5.36)	57 (6.45)	90
Decrement	362 (58.77)	80 (9.05)	442	Decrement	270 (43.83)	143 (16.18)	413
Unavailable	67 (10.88)	149 (16.86)	216	Unavailable	194 (31.49)	151 (17.08)	345
Total	616 (100)	884 (100)	1500	Total	616 (100)	884 (100)	1500
<b>Hemoglobin Status</b>				<b>Blast cell ratio</b>			
Normal	143 (23.21)	571 (64.59)	714	≤50%	86 (13.96)		86
Increment	2 (0.32)	4 (0.45)	6	>50%	210 (34.09)		210
Decrement	425 (68.99)	161 (18.21)	586	Blank	320 (51.95)		320
Unavailable	46 (7.47)	148 (16.74)	194	Total	616 (100)		616
Total	616 (100)	884 (100)	1500	<b>Alkaline Phosphates</b>			
<b>Platelets Status</b>				Normal	19 (3.08)		19
Normal	185 (30.03)	645 (72.96)	830	Increment	63 (10.23)		63
Increment	58 (9.42)	62 (7.01)	120	Decrement	0 (0)		0
Decrement	323 (52.44)	29 (3.28)	352	Unavailable	534 (86.69)		534
Unavailable	50 (8.12)	148 (16.74)	198	Total	616 (100)		616
Total	616 (100)	884 (100)	1500				

# Out of the total 616 patients, the data 22 were excluded in the subsequent analysis.

**Supplementary Table IV. Odds ratios for demographic and life style related variables for leukemia patients in comparison to controls.**

Categories	Variables	Patients N (%)	Controls N (%)	Odds ratios	95 % CI	P values
Gender	Male	411 (66.72)	623 (70.47)	0.84	0.67-1.05	P = 0.1223
	Female	205 (33.27)	261 (29.52)	1.00		
Blood Group	B	83 (13.47)	63 (7.12)	1.11	0.74-1.68	P = 0.6011
	All others	143 (23.21)	121 (13.69)	1.00		
Rh-Factor	+ve	206 (33.44)	166 (18.77)	1.12	0.57-2.18	P = 0.7460
	-ve	20 (3.24)	18 (2.03)	1.00		
Ethnicity	Pathan	354 (57.46)	289 (32.69)	2.85	2.3-3.55	P < 0.0001
	All others	236 (38.31)	550 (62.22)	1.00		
Education	No education	208 (33.77)	156 (17.65)	3.36	2.62-4.32	P < 0.0001
	Educated	275 (44.64)	694 (78.5)	1.00		
Diet	Poor diet	150 (24.35)	126 (14.25)	2.34	1.79-3.06	P < 0.0001
	Standard diet	367 (59.57)	722 (81.67)	1.00		
Weight status	Underweight	123 (19.96)	152 (17.19)	1.96	1.49-2.58	P < 0.0001
	Normal, overweight	280 (45.45)	677 (76.58)	1.00		
Parental consanguinity	Yes	202 (32.79)	193 (21.83)	2.14	1.68-2.72	P < 0.0001
	No	299 (48.53)	610 (69)	1.00		
Family history	Yes	34 (5.51)	12 (1.35)	4.25	2.18-8.27	P < 0.0001
	No	582 (94.48)	872 (98.64)	1.00		
Area	Rural	265 (43.01)	252 (28.5)	2.94	2.1-4.11	P < 0.0001
	Urban	63 (10.22)	176 (19.9)	1.00		
Environment	Polluted	124 (20.12)	302 (34.16)	0.86	0.58-1.29	P = 0.4692
	Clean	45 (7.3)	127 (14.36)	1.00		
Water type	Ground water	240 (38.96)	241 (27.26)	2.26	1.65-3.1	P < 0.0001
	All others	82 (13.31)	186 (21.04)	1.00		
Fuel	Wood	287 (46.59)	206 (23.3)	3.97	3.15-5.01	P < 0.0001
	Gas	233 (37.82)	664 (75.11)	1.00		
Family set up	Extended	214 (34.74)	271 (30.65)	1.17	0.87-1.59	P = 0.2984
	Nuclear	109 (17.69)	162 (18.32)	1.00		
Tobacco use	Yes	189 (30.68)	233 (26.35)	1.58	1.25-1.99	P < 0.0001
	No	329 (53.4)	639 (72.28)	1.00		
Carbonated drinks	Yes	336 (54.54)	519 (58.71)	1.26	1-1.58	P = 0.0461
	No	180 (29.22)	350 (39.59)	1.00		
Microwave use	Yes	53 (8.6)	294 (33.25)	0.25	0.18-0.35	P < 0.0001
	No	406 (65.9)	573 (64.81)	1.00		
Perfume use	Yes	264 (42.85)	620 (70.13)	0.42	0.34-0.53	P < 0.0001
	No	249 (40.42)	248 (28.05)	1.00		

**Supplementary Table V. Odd ratio of hematological variables for leukemia patients in comparison to controls.**

Categories	Variables	Patients N (%)	Controls N (%)	Odds ratios	95 % CI	P-values
WBCs count <sup>a</sup>	Leukocytosis	228 (40.07)	84 (9.5)	9.07	6.47-12.71	P < 0.0001
	Normal, Leukocytopenia	341 (59.93)	651 (73.64)	1.00		
RBCs count <sup>b</sup>	Anemia	362 (58.76)	80 (9.04)	15.85	11.84-21.22	P < 0.0001
	Normal, Erythrocytosis	187 (30.36)	655 (74.1)	1.00		
Hemoglobin status	Lower Hb <sup>c</sup>	425 (68.99)	161 (18.21)	8.12	6.35-10.37	P < 0.0001
	Normal	145 (23.54)	575 (65.05)	1.00		
Platelets count	Thrombocytopenia	323 (52.43)	29 (3.28)	32.41	21.57-48.68	P < 0.0001
	Normal, Thrombocytosis	243 (39.45)	707 (79.98)	1.00		
Lymphocytes %	Lymphocytosis	152 (24.67)	96 (10.85)	3.42	2.56-4.57	P < 0.0001
	Normal, Lymphocytopenia	295 (47.89)	637 (72.06)	1.00		
Neutrophils %	Neutropenia	270 (43.83)	143 (16.17)	7.33	5.59-9.6	P < 0.0001
	Normal, Neutrocytosis	152 (24.6)	590 (66.7)	1.00		

<sup>a</sup>WBCs, White blood cells, <sup>b</sup>RBCs, Red blood cells, <sup>c</sup>Hb, Hemoglobin.

**Supplementary Table VI. Odds ratios for high-risk leukemia patient's age groups in comparison to control's age groups.**

Variables	Risk	Risk group (Age category)	Patients N (%)	Controls N (%)	Odd ratios	95% CI	P value
Diet	Poor	1.1-5	25 (4.20)	30 (3.39)	0.70	0.38-1.26	P = 0.2326
		All other groups	115 (19.36)	96 (10.86)	1.00		
	Poor	5.1-15	59 (9.93)	27 (3.05)	2.67	1.55-4.59	P = 0.0004
		All other groups	81 (13.64)	99 (11.20)	1.00		
Parental consanguinity	Consanguineous union	1.1-5	48 (12.18)	45 (11.42)	1.03	0.65-1.64	P = 0.8951
		All other groups	153 (38.83)	148 (37.56)	1.00		
	Consanguineous union	5.1-15	80 (20.30)	57 (14.46)	1.58	1.04-2.4	P = 0.0329
		All other groups	121 (30.71)	136 (34.52)	1.00		
	Consanguineous union	39.1 and >	35 (8.88)	21 (5.32)	1.73	0.97-3.09	P = 0.0656
		All other groups	166 (42.13)	172 (43.65)	1.00		
Family history	Family history, +	5.1-15	15 (34.09)	2 (4.54)	4.41	0.83-23.42	P = 0.0814
		All other groups	17 (38.64)	10 (22.73)	1.00		
	Family history, +	5.1-15	15 (34.09)	2 (4.54)	0.48	0.02-11.37	P = 0.6473
		39.1 and >	6 (13.63)	0 (0)	1.00		
	Family history, +	39.1 and >	6 (13.63)	0 (0)	6.13	0.32-117.64	P = 0.2289
		All other groups	26 (59.09)	12 (27.27)	1.00		
Family type	Extended	5.1-15	82 (13.8)	47 (5.31)	3.13	2.05-4.77	P < 0.0001
		All other groups	121 (20.37)	224 (25.34)	1.00		
	Extended	1.1-5	56 (9.42)	39 (4.41)	2.27	1.43-3.58	P = 0.0005
		All other groups	147 (24.75)	232 (26.24)	1.00		

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Variables	Risk	Risk group (Age Category)	Patients N (%)	Controls N (%)	Odds ratios	95% CI	P value
Area	Extended	15.1-39	31 (5.21)	142 (16.06)	0.16	0.1-0.26	P < 0.0001
		All other groups	172 (28.96)	129 (14.59)	1.00		
	Extended	39.1 and >	33 (5.55)	36 (4.07)	1.27	0.76-2.11	P = 0.3647
		All other groups	170 (28.62)	235 (26.58)	1.00		
	Rural	1.1-5	66 (11.11)	39 (4.41)	1.93	1.24-3	P = 0.0036
		All other groups	187 (31.48)	213 (24.1)	1.00		
	Rural	5.1-15	103 (17.34)	51 (5.76)	2.71	1.82-4.02	P < 0.0001
		All other groups	150 (25.25)	201 (22.74)	1.00		
	Rural	15.1-39	42 (7.07)	111 (12.55)	0.25	0.17-0.38	P < 0.0001
		All other groups	211 (35.52)	141 (15.95)	1.00		
	Rural	39.1 and >	41 (6.90)	43 (4.86)	0.94	0.59-1.5	P = 0.7957
		All other groups	212 (35.69)	209 (23.64)	1.00		
Fuel	Wood	1.1-5	54 (9.09)	29 (3.28)	1.48	0.91-2.43	P = 0.1159
		All other groups	222 (37.37)	177 (20.02)	1.00		
	Wood	5.1-15	94 (15.82)	42 (4.75)	2.02	1.32-3.07	P = 0.0011
		All other groups	182 (30.64)	164 (18.55)	1.00		
	Wood	5.1-15	94 (15.82)	42 (4.75)	1.20	0.67-2.15	P = 0.5339
		All other groups	54 (9.09)	29 (3.28)	1.00		
Water type	Ground	1.1-5	62 (10.43)	42 (4.75)	1.77	1.14-2.75	P = 0.0115
		All other groups	166 (27.95)	199 (22.51)	1.00		
	Ground	5.1-15	98 (16.49)	62 (7.01)	2.18	1.47-3.21	P = 0.0001
		All other groups	130 (21.89)	179 (20.25)	1.00		
	Ground	15.1-39	35 (5.89)	95 (10.74)	0.28	0.18-0.43	P < 0.0001
		All other groups	193 (32.49)	146 (16.52)	1.00		
	Ground	39.1 and >	33 (5.55)	38 (4.29)	0.90	0.55-1.5	P = 0.6961
		All other groups	195 (32.83)	203 (22.96)	1.00		
Tobacco use	Tobacco use	5.1-15	62 (10.43)	61 (6.90)	1.48	0.97-2.26	P = 0.0693
		All other groups	118 (19.87)	172 (19.46)	1.00		
	Tobacco use	1.1-5	34 (5.72)	33 (3.73)	1.41	0.84-2.38	P = 0.1977
		All other groups	146 (24.58)	200 (22.62)	1.00		
	Tobacco use	39.1 and >	51 (8.58)	35 (3.95)	2.24	1.38-3.63	P = 0.0011
		All other groups	129 (21.72)	198 (22.4)	1.00		
	Tobacco use	15.1-39	32 (5.38)	101 (11.42)	0.28	0.18-0.45	P < 0.0001
		All other groups	148 (24.92)	132 (14.93)	1.00		
	Tobacco use	5.1-15	62 (10.43)	61 (6.90)	0.70	0.4-1.22	P = 0.2048
		39.1 and >	51 (8.58)	35 (3.95)	1.00		
	Tobacco use	39.1 and >	51 (8.58)	35 (3.95)	1.43	0.82-2.5	P = 0.2048
		5.1-15	62 (10.43)	61 (6.90)	1.00		

**Supplementary Table VII. Odds ratios for high risk patient's age groups, comparing momentous age groups with individual/combined age groups of the patients.**

Categories	Variables	Risk group (Age category)	Patients (Group 1) <sup>a</sup> N (%)	Patients (Group 2) <sup>b</sup> N (%)	Odds ratios	95% CI	P value
Gender	Male	Lymphoid	278 (46.8)	122 (20.53)	1.97	1.38-2.81	P = 0.0002
		Myeloid	104 (17.5)	90 (15.15)	1.00		
	Male	Acute	298 (50.16)	102 (17.17)	1.34	0.92-1.95	P = 0.1285
		Chronic	133 (22.39)	61 (10.26)	1.00		
Diet	Poor diet, family type, extended vs nuclear	15.1-39	19 (3.19)	7 (1.17)	1.73	0.62-4.81	P = 0.2959
Weight status	Underweight	5.1-15	33 (5.55)	21 (3.53)	1		
		1.1-5	62 (10.43)	2 (0.33)	6.89	1.48-32.16	P = 0.0141
	Underweight (Normal + Overweight)	5.1-15	54 (9.09)	12 (2.02)	1.00		
		1.1-5	62 (10.43)	10 (1.68)	7.92	3.72-16.89	P < 0.0001
	Underweight (Normal + Overweight)	5.1-15	54 (9.09)	69 (11.61)	1.00		
		1.1-5	62 (10.43)	10 (1.68)	27.44	13.31-56.57	P < 0.0001
	Overweight CML vs CLL	All other groups	61 (10.27)	270 (45.45)	1.00		
		39.1 and > 15.1-39	53 (8.92) 23 (3.87)	13 (2.18) 1 (0.16)	0.18 1.00	0.02-1.44	P = 0.1050
	Overweight CLL vs CML	39.1 and > 15.1-39	13 (2.18) 1 (0.16)	53 (8.92) 23 (3.87)	5.64 1.00	0.7-45.7	P = 0.1050
		5.1-15	48 (8.08)	26 (4.37)	1.45	0.78-2.66	P = 0.2368
Consanguinity and ethnicity	Consanguinity, Pathan vs Punjabi	All other groups	60 (10.1)	47 (7.91)	1		
Fuel, water, and area	Wood, ground water, rural area vs gas	5.1-15	59 (9.93)	21 (3.53)	1.04	0.54-1.99	P = 0.9047
		All other groups	81 (13.64)	30 (5.05)	1		
	Wood, ground water, rural area vs gas	15.1-39	26 (4.37)	4 (0.67)	2.68	0.89-8.1	P = 0.0807
		All other groups	114 (19.19)	47 (7.91)	1		
	Wood, ground water, rural area vs gas	39.1 and >	24 (4.04)	4 (0.67)	2.43	0.8-7.39	P = 0.1172
		All other groups	116 (19.53)	47 (7.91)	1		
	Wood, ground water, rural area vs gas	5.1-15	59 (9.93)	21 (3.53)	0.47	0.15-1.51	P = 0.2036
		39.1 and >	24 (4.04)	4 (0.67)	1		
	Rural, ground water vs urban	5.1-15	103 (17.34)	18 (3.03)	1.02	0.35-2.99	P = 0.9686
		39.1 and >	28 (4.71)	5 (0.84)	1		
Area rural, ground water vs urban	1.1-5	53 (8.92)	9 (1.51)	1.02	0.45-2.31	P = 0.9541	
	All other groups	161 (27.1)	28 (4.71)	1			
Area rural, ground water vs urban	5.1-15	103 (17.34)	18 (3.03)	0.98	0.49-1.97	P = 0.9536	
	All other groups	111 (18.69)	19 (3.20)	1			
Area	Area, rural vs urban	1.1-5	66 (11.11)	16 (2.69)	1.28	0.65-2.52	P = 0.4713
Tobacco use	Tobacco use	5.1-15	103 (17.34)	32 (5.38)	1		
		39.1 and >	51 (8.58)	75 (12.62)	1.06	0.66 - 1.72	P = 0.7994
Disease origin	Lymphoid	5.1-15	62 (10.43)	97 (16.32)	1		
		15.1-39	73 (12.28)	75 (12.62)	0.43	0.3-0.63	P < 0.0001
	Myeloid	All other groups	309 (52.02)	137 (23.06)	1.00		
		15.1-39	75 (12.62)	73 (12.28)	2.32	1.58-3.39	P < 0.0001

*Table continued on next page.....*



Categories	Variables	Risk group (Age category)	Patients (Group 1) <sup>a</sup> N (%)	Patients (Group 2) <sup>b</sup> N (%)	Odds ratios	95 % CI	P value
Disease nature	Acute	All other groups	137 (23.06)	309 (52.02)	1.00		
		15.1-39	103 (17.34)	45 (7.58)	0.82	0.55-1.24	P = 0.3514
	Chronic	All other groups	328 (55.22)	118 (19.87)	1.00		
		15.1-39	45 (7.58)	103 (17.34)	1.21	0.81-1.83	P = 0.3514
	Chronic	All other groups	118 (19.87)	328 (55.22)	1.00		
		39.1 and >	112 (18.85)	40 (6.73)	21.47	13.49-34.15	P < 0.0001
Blast cells %	Blast cells >50%, Lymphoid vs ≤50% Lymphoid	All other groups	51 (8.59)	391 (65.82)	1.00		
		5.1-15	76 (12.79)	21 (3.53)	1.25	0.68-2.32	P = 0.4720
	Blast Cells >50%, Lymphoid vs ≤50% Lymphoid	All other groups	104 (17.52)	36 (6.06)	1.00		
		5.1-15	76 (12.79)	21 (3.53)	1.11	0.44-2.82	P = 0.8203
	Blast Cells >50%, Lymphoid vs ≤50% Lymphoid	15.1-39	26 (4.37)	8 (1.34)	1.00		
		5.1-15	76 (12.79)	21 (3.53)	2.41	0.87-6.67	P = 0.0895
	Blast cell ≤50% Myeloid vs ≤50% Lymphoid	39.1 and >	12 (2.02)	8 (1.34)	1.00		
		39.1 and >	14 (2.35)	8 (1.34)	5.72	2.01-16.23	P = 0.0011
	Blast cells ≤50%, Chronic vs Acute	All other groups	15 (2.53)	49 (8.25)	1.00		
		39.1 and >	17 (2.86)	5 (0.84)	27.69	7.78-98.49	P < 0.0001
	Blast Cells >50%, Acute VS ≤50% Acute	All other groups	7 (1.17)	57 (9.59)	1.00		
		5.1-15	87 (14.64)	26 (4.37)	1.04	0.58-1.85	P = 0.8978
Blast Cells ≤50% Chronic vs >50%, Chronic	All other groups	116 (19.53)	36 (6.06)	1.00			
	39.1 and >	17 (2.86)	6 (1.01)	0.18	0.01-3.61	P = 0.2619	
Blast Cells >50%, Chronic VS ≤50% Chronic	All other groups	7 (1.18)	0 (0)	1.00			
	39.1 and >	6 (1.01)	17 (2.86)	5.57	0.28-112.02	P = 0.2619	
Hemoglobin status	Hb Decrement, Blast Cells >50%, Lymphoid vs ≤50% Lymphoid	All other groups	0 (0)	7 (1.18)	1.39	0.52-3.69	P = 0.5130
		5.1-15	61 (10.26)	16 (2.69)	1		
	Hb Decrement, Blast Cells >50%, Lymphoid vs ≤50% Lymphoid	15.1-39	22 (3.7)	8 (1.34)	1		
		5.1-15	61 (10.26)	16 (2.69)	1.91	0.57-6.37	P = 0.2946
Hb Decrement, Blast cell ≤50% Myeloid vs >50% myeloid	39.1 and >	10 (1.68)	5 (0.84)	1			
	39.1 and >	10 (1.68)	7 (1.17)	1.63	0.4-6.63	P = 0.4927	
Platelets status	PLT decrement, Blast cell ≤50% Lymphoid vs >50% Lymphoid	15.1-39	7 (1.17)	8 (1.34)	1		
		5.1-15	15 (2.52)	58 (9.76)	0.77	0.37-1.58	P = 0.4685
	PLT decrement, Blast cell >50% Myeloid vs >50% Lymphoid	All other groups	26 (4.38)	77 (12.96)	1		
		15.1-39	8 (1.34)	22 (3.70)	2.42	0.93-6.29	P = 0.0705
	PLT Decrement, Blast cell ≤50%, Myeloid vs ≤50% Lymphoid	All other groups	17 (2.86)	113 (19.02)	1		
15.1-39	2 (0.33)	7 (1.17)	1.62	0.27-9.75	P = 0.5988		
	All other groups	6 (1.06)	34 (5.72)	1			

<sup>a</sup> Group 1: Patients exposed to the risk variable; <sup>b</sup> Patients not exposed to the variable.