IgA levels at diagnosis predict for infections, time to treatment, and survival in chronic lymphocytic leukemia.

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Supplementary Table 1. Competing risk regression predicting treatment of CLL/SLL

Variables		Unimputed model						Imputed model					
		Univariable			Multivariable			Univariable			Multivariable		
		SHR	CI, 95%	P value	SHR	CI, 95%	P value	SHR	CI, 95%	P value	SHR	CI, 95%	P value
IgG	*IgG^0.5	3.05	1.34 - 6.96	<0.001				2.19	1.42 - 3.37	0.001			
	IgG^-1	1.69	1.30 - 2.20					1.16	0.98 - 1.38				
IgA	**IgA^0.5	**0.13**	**0.07 - 0.22**	<0.001	0.56	0.29 - 1.09	0.008	0.18	0.10 - 0.32	<0.001	0.34	**0.18 - 0.64**	0.001
	IgA^2	1.16	1.11 - 1.21		1.07	1.02 - 1.12		1.13	1.08 - 1.19		1.09	1.04 - 1.14	
IgM	IgM^-1	1.07	1.03 - 1.12	0.001	1.05	1.00 - 1.11	0.036	1.07	1.03 - 1.11	0.001			
Gender	Female	0.97	0.77 - 1.21	0.764				0.97	0.77 - 1.21	0.764			
	Male	1						1					
CIRS	Continuous	1.05	1.01 - 1.09	0.010				1.05	1.01 - 1.09	0.010			
Age	Continuous	0.99	0.99 - 1.00	0.266				0.99	0.99 - 1.00	0.266			
CD38	Missing	1.32	0.94 - 1.86	<0.001	0.96	0.60 - 1.54	0.004			<0.001			
	Positive	2.55	1.99 - 3.27		1.70	1.23 - 2.36		2.43	1.89 - 3.11				
	Negative	1			1			1					
ZAP-70	Missing	1.37	1.00 - 1.88	<0.001						<0.001			
	Positive	2.23	1.74 - 2.86					2.15	1.67 - 2.77				
	Negative	1						1					
IGHV gene	No result	0.86	0.45 - 1.66	0.046				0.87	0.25 - 2.97	0.153			
	VH6	0.72	0.23 - 2.26					1.31	0.52 - 3.28				
	VH5	1.08	0.48 - 2.42					1.07	0.49 - 2.37				
	VH4	0.93	0.46 - 1.91					1.13	0.54 - 2.36				
	VH3	0.99	0.52 - 1.88					1					
	VH2	1						1.61	0.76 - 3.43				
	VH1	1.49	0.77 - 2.85										
IGHV	No result	1.45	1.06 - 1.97	<0.001	1.39	0.65 - 2.98	<0.001			<0.001			<0.001
	Unmutated	3.42	2.63 - 4.46		2.49	1.73 - 3.58		3.52	2.70 - 4.60		3.01	2.19 - 4.15	
	Mutated	1			1			1			1		
B2M	Missing	1.73	1.23 - 2.44	<0.001	0.75	0.41 - 1.37	0.004			<0.001			0.002
	High	2.49	1.92 - 3.23		1.54	1.13 - 2.11		2.24	1.75 - 2.87		1.57	1.17 - 2.10	
	Normal	1			1			1			1		
M- band	Missing	0.93	0.71 – 1.22	0.281				0.93	0.71 – 1.22	0.281			
	Oligoclonal	1.60	0.69 – 3.74					1.60	0.69 – 3.74				
	Present	1.20	0.84 – 1.71					1.20	0.84 – 1.71				
	Not present	1						1					
SLL	SLL	9.92	4.83 - 20.36	<0.001	6.18	3.10 - 12.31	<0.001	9.92	4.83 - 20.36	<0.001	7.32	3.58 - 14.99	<0.001
MBL	MBL	1			1			1			1		
CLL, stages	0	3.56	1.78 - 7.12		2.28	1.18 - 4.42		3.56	1.78 - 7.12		2.87	1.46 - 5.66	
	I-II	10.79	5.41 - 21.51		5.68	2.93 - 11.01		10.79	5.41 - 21.51		8.25	4.17 - 16.30	
	III-IV	17.75	8.24 - 38.20		15.60	6.46 - 37.70		17.75	8.24 - 38.20		12.24	**5.50 - 27.25**	
Diagnosis Year	Continuous	0.98	0.95 - 1.02	0.442				0.98	0.95 - 1.02	0.442			

* IgG^-1 and IgG^0.5, means that IgG was entered as two variables where the one is the power of -1, and the other was to the power of 0.5.

**IgA entered as two variables where one was to the power of 0.5 and the other was to the power of 2.

Supplementary Table 2. Cox regression predicting overall survival

Variables		Unimputed model						Imputed model					
		Univariable			Multivariable			Univariable			Multivariable		
		SHR	CI, 95%	*P* value	SHR	CI, 95%	*P* value	SHR	CI, 95%	*P* value	SHR	CI, 95%	*P* value
IgG		1.01	0.99 - 1.03	0.309				1.01	0.99 - 1.03	0.339			
IgA	*IgA^1	0.62	0.47 - 0.81	<0.001				0.65	0.49 - 0.85	<0.001	0.81	**0.61 - 1.08**	0.026
	IgA^3	1.03	1.02 - 1.04					1.03	1.02 - 1.04		1.01	1.00 - 1.03	
IgM		1.04	0.98 - 1.10	0.202				1.03	0.97 - 1.10	0.332			
Gender	Female	0.67	0.49 - 0.92	0.013	0.55	0.39 - 0.76	<0.001	0.67	0.49 - 0.92	0.013	0.52	0.38 - 0.73	<0.001
	Male	1			1			1			1		
CIRS	(CIRS+1)^1	1.40	1.15 - 1.71	<0.001				1.40	1.15 - 1.71	<0.001			
	(CIRS+1)^2	0.98	0.97 - 1.00					0.98	0.97 - 1.00				
Age	(Age/50)^3	1.79	1.61 - 2.00	<0.001	1.78	1.58 - 2.02	<0.001	1.79	1.61 - 2.00	<0.001	1.72	1.52 - 1.95	<0.001
CD38	Missing	2.24	1.53 - 3.28	<0.001	1.83	1.18 - 2.83	0.023						
	Positive	1.91	1.36 - 2.67		1.30	0.90 - 1.88		1.86	1.33 - 2.59	<0.001			
	Negative	1			1			1					
ZAP-70	Missing	2.20	1.56 - 3.10	<0.001	1.71	1.15 - 2.53	0.001						
	Positive	1.19	0.82 - 1.73		0.73	0.49 - 1.09		1.17	0.81 - 1.68	0.403			
	Negative	1			1			1					
IGHV gene	No result	5.25	1.29 - 21.34										
	VH6	2.04	0.34 - 12.19					1.67	0.28 - 10.02				
	VH5	1.94	0.38 - 10.01	<0.001				1.66	0.33 - 8.39				
	VH4	2.22	0.50 - 9.75					2.01	0.47 - 8.50	0.786			
	VH3	2.41	0.59 - 9.89					2.28	0.59 - 8.75				
	VH2	1						1					
	VH1	2.97	0.71 - 12.46					2.51	0.66 - 9.60				
IGHV	No result	2.97	2.05 - 4.31	<0.001									
	Unmutated	1.86	1.25 - 2.76					1.93	1.31 - 2.86	0.001			
	Mutated	1						1					
B2M	Missing	3.06	1.70 - 5.51	<0.001	1.85	1.01 - 3.40	<0.001						
	High	6.79	4.14 - 11.11		3.07	1.84 - 5.12		5.59	3.50 - 8.93	<0.001	3.01	1.84 - 4.92	<0.001
	Low-normal	1			1			1			1		
M-band	Missing	1.01	0.70 - 1.47					1.01	0.70 - 1.47				
	Oligoclonal	2.19	0.98 - 4.87	0.005				2.19	0.98 - 4.87	0.005			
	Present	1.76	1.15 - 2.68					1.76	1.15 - 2.68				
	Not present	1						1					
SLL		2.01	0.99 - 4.08		1.08	0.51 - 2.30		2.01	0.99 - 4.08		1.32	0.62 - 2.78	
MBL		1		<0.001	1		0.007	1		<0.001	1		0.045
CLL, stages	0	1.33	0.70 - 2.53		1.04	0.54 - 2.02		1.33	0.70 - 2.53		1.03	0.53 - 1.99	
	I-II	2.29	1.20 - 4.37		1.66	0.83 - 3.32		2.29	1.20 - 4.37		1.50	0.75 - 3.00	
	III-IV	4.92	2.43 - 9.96		2.38	1.12 - 5.10		4.92	2.43 - 9.97		2.21	**1.03 - 4.78**	
IgG replacement	Yes	1.13	0.55 - 2.33	0.738				1.13	0.55 - 2.33	0.738			
	No	1						1					
CLL treatment	Yes	3.05	2.23 - 4.17	<0.001	1.96	1.37 - 2.79	<0.001	3.05	2.23 - 4.17	<0.001	1.83	1.29 - 2.59	0.001
	No	1			1			1			1		
Diagnosis year	Continuous	1.02	0.96 - 1.08	0.540				1.02	0.96 - 1.08	0.540			

*IgA entered as two variables where one was to the power of 1, and the other was to the power of 3.

Supplementary Table 3. Competing risk regression predicting IgG replacement therapy.

Variables		Unimputed model						Imputed model					
		Univariable			Multivariable			Univariable			Multivariable		
		SHR	CI, 95%	P value	SHR	CI, 95%	P value	SHR	CI, 95%	P value	SHR	CI, 95%	P value
IgG	$(IgG/10)^{-2}$ $(IgG/10)^{-2}$ $*\ln(IgG/10)$	2.44 1.62	1.55 - 3.85 1.21 - 2.16	<0.001	2.28 1.56	1.44 - 3.60 1.17 - 2.09	<0.001	2.11 1.50	1.30 - 3.41 1.10 - 2.04	<0.001	1.68 1.32	**1.04 - 2.70** 0.98 - 1.77	**0.047**
IgA		0.41	0.23 - 0.72	0.002				0.46	0.28 - 0.75	0.002	0.54	0.31 - 0.95	0.031
IgM	log(IgM)	0.53	0.36 - 0.78	0.001				0.55	0.38 - 0.80	0.002			
Gender	Female Male	0.97 1	0.55 - 1.73	0.919				0.97 1	0.55 - 1.73	0.919			
CIRS		1.19	1.10 - 1.29	<0.001	1.22	1.11 - 1.35	<0.001	1.19	1.10 - 1.29	<0.001	1.24	1.14 - 1.36	<0.001
Age	per 10 years	0.73	0.59 - 0.92	0.006	0.66	0.50 - 0.88	0.005	0.73	0.59 - 0.92	0.006	0.64	0.50 - 0.83	0.001
CD38	Missing Positive Negative	0.94 1.80 1	0.39 - 2.31 0.98 - 3.30	0.128				1.71 1	0.94 - 3.12	0.082			
ZAP-70	Missing Positive Negative	0.11 1.91 1	0.01 - 0.79 1.08 - 3.37	0.004				1.92 1	1.08 - 3.42	0.026			
IGHV	No result Unmutated Mutated	0.92 1.30 1	0.45 - 1.86 0.68 - 2.48	0.583				1.32 1	0.69 - 2.44	0.404			
B2M	Missing High Low-normal	1.30 1.57 1	0.56 - 3.02 0.79 - 3.13	0.439				1.37 1	0.72 - 2.61	0.341			
SLL **MBL** **CLL, stage**	 0 I-II III-IV	0.77 1 0.83 1.91 2.50	0.19 - 3.04 0.28 - 2.50 0.64 - 5.68 0.74 - 8.40	0.034				0.77 1 0.83 1.91 2.50	0.19 - 3.04 0.28 - 2.50 0.64 - 5.68 0.74 - 8.40	0.034			
CLL Treatment	Yes No	2.84 1	1.57 - 5.13	0.001	2.97 1	1.46 - 6.04	0.003	2.84 1	1.57 - 5.13	0.001	2.60 1	1.42 - 4.76	0.002