Supplementary Materials for

A 15-year single-centre clinical and genomic analysis of late-onset Group B Streptococcus infection.

Table S1. Distribution of Clonal Complexes and Serotypes acros Age Groups

	EOD (N=2)	**LOD** (N=48)	**VLOD** (N=20)	**Older Children** (N=10)	**Adults** (N=7)	**Total Infants** (N=70)	**Total** (N=87)
Serotypes							
Ia	2 (100%)	7 (15%)	6 (30%)	5 (50%)	1 (14%)	15 (21.4%)	21 (24.1%)
Ib	0 (0%)	2 (4%)	4 (20%)	1 (10%)	0 (0%)	6 (8.6%)	7 (8%)
II	0 (0%)	2 (4%)	0 (0%)	0 (0%)	1 (14%)	2 (2.9%)	3 (3.4%)
III	0 (0%)	36 (75%)	9 (45%)	1 (10%)	2 (29%)	45 (64.3%)	48 (55.2%)
IV	0 (0%)	1 (2%)	0 (0%)	1 (10%)	2 (29%)	1 (1.4%)	4 (4.6%)
V	0 (0%)	0 (0%)	1 (5%)	2 (20%)	1 (14%)	1 (1.4%)	4 (4.6%)
Clonal Complexes (CC)							
1	0 (0%)	0 (0%)	1 (5%)	2 (20%)	1 (14%)	1 (1.4%)	4 (4.6%)
12	0 (0%)	3 (6%)	4 (20%)	1 (10%)	0 (0%)	7 (10%)	8 (9.2%)
17	0 (0%)	31 (65%)	9 (45%)	1 (10%)	0 (0%)	40 (57.1%)	41 (47.1%)
19	0 (0%)	6 (12%)	0 (0%)	0 (0%)	3 (43%)	6 (8.6%)	9 (10.3%)
23	2 (100%)	7 (15%)	6 (30%)	5 (50%)	1 (14%)	15 (21.4%)	21 (24.1%)
459	0 (0%)	1 (2%)	0 (0%)	1 (10%)	2 (29%)	1 (1.4%)	4 (4.6%)

Table S2. Distribution of Clonal complexes (CCs) and Sequence Types (STs) by Age group

	EOD (N=2)	**LOD** (N=48)	**VLOD** (N=20)	**Older Children** (N=10)	**Adults** (N=7)	**Total** (N=87)
CC1						
ST1	0 (0%)	0 (0%)	1 (5%)	2 (20%)	1 (14%)	4
CC12						
ST10	0 (0%)	1 (2%)	1 (5%)	1 (0%)	0 (0%)	3
ST8	0 (0%)	1 (2%)	3 (15%)	0 (0%)	0 (0%)	4
NF	0 (0%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	1
Total	0 (0%)	3 (6%)	4 (20%)	1 (10%)	0 (0%)	8
CC17						
ST109	0 (0%)	1 (2%)	1 (5%)	0 (0%)	0 (0%)	2
ST147	0 (0%)	2 (4%)	1 (5%)	0 (0%)	0 (0%)	3
ST17	0 (0%)	26 (54%)	5 (25%)	1 (10%)	0 (0%)	32
ST17*	0 (0%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	1
ST31	0 (0%)	0 (0%)	2 (10%)	0 (0%)	0 (0%)	2
ST860	0 (0%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	1
Total	**0 (0%)**	**31 (65%)**	**9 (45%)**	**1 (10%)**	**0 (0%)**	**41**
CC19						
ST19	0 (0%)	3 (6%)	0 (0%)	0 (0%)	2 (29%)	5
ST28	0 (0%)	1 (2%)	0 (0%)	0 (0%)	1 (14%)	2
ST335	0 (0%)	1 (2%)	0 (0%)	0 (0%)	0 (0%) 1	
ST1563*	0 (0%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	1
Total	**0 (0%)**	**6 (12%)**	**0 (0%)**	**0 (0%)**	**3 (43%)**	**9**
CC23						
ST174	0 (0%)	0 (0%)	1 (5%)	0 (0%)	0 (0%)	5
ST23	2 (100%)	6 (12%)	5 (25%)	4 (40%)	0 (0%)	17
ST88	0 (0%)	0 (0%)	0 (0%)	1 (10%)	1 (14%)	1
ST88*	0 (0%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	1
Total	**2 (100%)**	**7 (15%)**	**6 (30%)**	**5 (50%)**	**1 (14%)**	**9**
CC459						
ST459	0 (0%)	1 (2%)	0 (0%)	1 (10%)	2 (29%)	4
Others						
NF	0 (0%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	1

* indicates the best scoring allele has >=1 mismatch (SNP or indel).

EOD:<7 days, LOD:7-89 days, VLOD:90-365 days, Older Children:1-17 years, Adults:≥ 18 years

Table S3. Allelic profiles of different sequence types (STs) in our study.

ST	N (%)	adhP	pheS	atr	glnA	sdhA	glcK	tkt	mismatches
Known STs									
17	32 (37%)	2	1	1	2	1	1	1	
23	17 (20%)	5	4	6	3	2	1	3	
19	5 (6%)	1	1	3	2	2	2	2	
1	4 (5%)	1	1	2	1	1	2	2	
459	4 (5%)	1	1	3	1	41	12	2	
8	4 (5%)	4	1	4	1	3	3	2	
10	3 (3%)	9	1	4	2	3	3	2	
1470	3 (3%)	2	1	188	2	1	1	1	
109	2 (2%)	2	1	1	10	1	1	1	
28	2 (2%)	1	1	3	5	2	2	2	
31	2 (2%)	2	1	1	6	1	1	1	
88	2 (2%)	5	10	6	3	2	1	3	
1747	1 (1%)	5	141	6	3	2	1	3	
335	1 (1%)	1	1	43	2	2	2	2	
860	1 (1%)	157	1	1	2	1	1	1	
Known STs with mismatches									
1563*	1 (1%)	1	1	202*	2	2	2	2	atr_202/1snp
17*	1 (1%)	2	1	1*	2	1	1	1	atr_1/1snp
88*	1 (1%)	5	10	6	3	2	1*	3	glcK_1/1snp
New ST profile									
NF	1 (1%)	4	1	4	4	3	3	2	

Table S4. Distribution of vaccine candidate targets and other immunogenic proteins across age groups in our study.

	EOD (N=2)	**LOD** (N=48)	**VLOD** (N=20)	**Older Children** (N=10)	**Adults** (N=7)	**Total Infants** (N=70)	**Total** (N=87)
Capsular polysaccharide vaccine							
Trivalent*	2 (100%)	45 (94%)	19 (95%)	7 (70%)	3 (43%)	66 (94%)	76 (87%)
Hexavalent*	2 (100%)	48 (100%)	20 (100%)	10 (100%)	7 (100%)	70 (100%)	87 (100%)
Protein subunit vaccine							
RIB	0 (0%)	37 (77%)	9 (45%)	1 (10%)	3 (43%)	46 (66%)	50 (57%)
ALPHA C	0 (0%)	3 (6%)	4 (20%)	1 (10%)	0 (0%)	7 (10%)	8 (9%)
ALP1	2 (100%)	7 (15%)	6 (30%)	5 (50%)	2 (29%)	15 (21%)	22 (25%)
ALP23	0 (0%)	1 (2%)	1 (5%)	3 (30%)	2 (29%)	2 (3%)	7 (8%)
GBS-NN2*	2 (100%)	48 (100%)	20 (100%)	10 (100%)	7 (100%)	70 (100%)	87 (100%)
Other Immunogenic Proteins							
Pilus proteins							
PI1	0 (0%)	36 (75%)	13 (65%)	6 (60%)	6 (86%)	49 (70%)	61 (70%)
PI2a1	2 (100%)	8 (17%)	11 (55%)	7 (70%)	1 (14%)	21 (30%)	29 (33%)
PI2a2	0 (0%)	6 (12%)	0 (0%)	0 (0%)	3 (43%)	6 (9%)	9 (10%)
PI2b	0 (0%)	30 (62%)	8 (40%)	1 (10%)	0 (0%)	38 (54%)	39 (45%)
PI1+PI2a1+ PI2a2+PI2b	2 (100%)	48 (100%)	20 (100%)	10 (100%)	7 (100%)	70 (100%)	87 (100%)
Sip proteins							
Sip.1a	0 (0%)	7 (15%)	1 (5%)	3 (30%)	6 (86%)	8 (11%)	17 (20%)
Sip.3a	2 (100%)	41 (85%)	19 (95%)	7 (70%)	1 (14%)	62 (89%)	70 (80%)
Sip	2 (100%)	48 (100%)	20 (100%)	10 (100%)	7 (100%)	70 (100%)	87 (100%)
Others							
C5a (scpB)	20 (100%)	47 (98%)	19 (95%)	8 (80%)	6 (86%)	68 (97%)	82 (94%)
Lmb	20 (100%)	47 (98%)	20 (100%)	10 (100%)	7 (100%)	69 (99%)	86 (99%)
FbsB	20 (100%)	38 (79%)	15 (75%)	6 (60%)	1 (14%)	55 (79%)	62 (71%)
Other Virulence Factors							
SRR proteins							
SRR1	2 (100%)	16 (33%)	11 (55%)	9 (90%)	6 (86%)	29 (41%)	44 (51%)
SRR2	0 (0%)	31 (65%)	9 (45%)	1 (10%)	0 (0%)	40 (57%)	41 (47%)
SRR1+SRR2	2 (100%)	47 (98%)	20 (100%)	10 (100%)	6 (86%)	69 (99%)	85 (98%)

EOD:<7 days, LOD:7-89 days, VLOD:90-365 days, Older Children:1-17 years, Adults:≥ 18 years
*Trivalent: covers serotypes Ia/Ib/III
*Hexavalent/GBS6: covers serotypes Ia/Ib/II/III/IV/V
*GBS-NN2: covers ALP proteins RIB + AlphaC + Alp1 +Alp2/3

Table S5. Genetic Resistance Markers Across Different Clonal Complexes (CCs)

	CC1 (N=4)	CC12 (N=8)	CC17 (N=41)	CC19 (N=9)	CC23 (N=21)	CC459 (N=4)	Total (N=87)
Aminoglycosides Resistance							
ANT6_IA	0 (0%)	0 (0%)	4 (10%)	0 (0%)	0 (0%)	0 (0%)	4 (5%)
APH3_III	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	**0 (0%)**	**0 (0%)**	**4 (10%)**	**0 (0%)**	**0 (0%)**	**0 (0%)**	**4 (5%)**
Tetracyclines Resistance							
TETM	4 (100%)	6 (75%)	39 (95%)	7 (78%)	18 (86%)	2 (50%)	76 (87%)
TETO	0 (0%)	0 (0%)	6 (15%)	2 (22%)	0 (0%)	0 (0%)	8 (9%)
Total	**4 (100%)**	**6 (75%)**	**40 (98%)**	**8 (89%)**	**18 (86%)**	**2 (50%)**	**78 (90%)**
MLSB Resistance							
ERMA	2 (50%)	1 (12%)	1 (2%)	3 (33%)	0 (0%)	4 (100%)	11 (13%)
ERMB	0 (0%)	2 (25%)	9 (22%)	2 (22%)	0 (0%)	0 (0%)	13 (15%)
ERMT	0 (0%)	1 (12%)	6 (15%)	0 (0%)	0 (0%)	0 (0%)	7 (8%)
Total	**2 (50%)**	**4 (50%)**	**16 (39%)**	**5 (56%)**	**0 (0%)**	**4 (100%)**	**31 (36%)**
M type Resistance							
MEFA	0 (0%)	0 (0%)	0 (0%)	1 (11%)	5 (24%)	0 (0%)	6 (7%)
MSRD	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	**0 (0%)**	**0 (0%)**	**0 (0%)**	**1 (11%)**	**5 (24%)**	**0 (0%)**	**6 (7%)**
Fluoroquinolone Resistance							
GYRA	0 (0%)	2 (25%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (2%)
PARC	0 (0%)	2 (25%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	3 (3%)
Total	**0 (0%)**	**4 (50%)**	**1 (2%)**	**0 (0%)**	**0 (0%)**	**0 (0%)**	**5 (6%)**

Table S6. Molecular Risk Factors of Age of Disease Onset (Infants vs Older Patients)

	Infants (n=70)	Older Patients (n=17)	Crude (LR) OR	Crude (LR) (95% CI)	Crude (LR) P-value	Adjusted (LMM) OR	Adjusted (LMM) (95% CI)	Adjusted (LMM) P-value
ALP protein family								
ALP1	15 (21.4%)	7 (41.2%)	0.39	(0.13 - 1.20)	0.1000	1.02	1.02 (0.71; 1.45)	0.9210
ALP23	2 (2.9%)	5 (29.4%)	0.07	(0.01 - 0.41)	0.0030	0.71	0.71 (0.49; 1.02)	0.0636
ALPHA	7 (10%)	1 (5.9%)	1.78	(0.20 - 15.51)	0.6030	1.45	1.45 (0.93; 2.26)	0.1070
RIB	46 (65.7%)	4 (23.5%)	6.23	(1.83 - 21.20)	0.0030	1.12	1.12 (0.72; 1.75)	0.6150
Pilus Islands								
PI1	49 (70%)	12 (70.6%)	0.97	(0.30 - 3.11)	0.9620	0.96	0.96 (0.76; 1.22)	0.7330
PI2A1	21 (30%)	8 (47.1%)	0.48	(0.16 - 1.42)	0.1860	1.16	1.16 (0.85; 1.6)	0.3570
PI2A2	6 (8.6%)	3 (17.6%)	0.44	(0.10 - 1.96)	0.2810	0.92	0.92 (0.57; 1.49)	0.7270
PI2A	27 (38.6%)	11 (64.7%)	0.34	(0.11 - 1.03)	0.0570	1.11	1.11 (0.81; 1.52)	0.5010
PI2B	38 (54.3%)	1 (5.9%)	19.00	(2.39 - 151.22)	0.0050	1.12	1.12 (0.77; 1.63)	0.5580
SRR Variants								
SRR1	29 (41.4%)	15 (88.2%)	0.09	(0.02 - 0.44)	0.0030	0.97	0.97 (0.63; 1.51)	0.9060
SRR2	40 (57.1%)	1 (5.9%)	21.33	(2.68 - 169.91)	0.0040	1.36	1.36 (0.77; 2.39)	0.2900
Sip Protein Variants								
Sip.1a	8 (11.4%)	9 (52.9%)	0.11	(0.03 - 0.38)	0.0000	0.72	0.72 (0.49; 1.05)	0.0931
Sip.3a	62 (88.6%)	8 (47.1%)	8.72	(2.62 - 29.06)	0.0000	1.39	1.39 (0.95; 2.03)	0.0931
Other Virulence factors								
HVGA	40 (57.1%)	1 (5.9%)	21.33	(2.68 - 169.91)	0.0040	1.36	1.36 (0.77; 2.39)	0.2900
lmb	69 (98.6%)	17 (100%)	0.00	(0.00 - Inf)	0.9920	0.78	0.78 (0.38; 1.6)	0.4990
scpB	68 (97.1%)	14 (82.4%)	7.29	(1.11 - 47.72)	0.0380	1.08	1.08 (0.7; 1.68)	0.7180
hylB	65 (92.9%)	15 (88.2%)	1.73	(0.31 - 9.81)	0.5340	0.90	0.9 (0.54; 1.48)	0.6660
fbsB	55 (78.6%)	7 (41.2%)	5.24	(1.71 - 16.09)	0.0040	1.09	1.09 (0.69; 1.7)	0.7200

Table S7. Molecular Risk Factors for ICU Admission among Infants

	ICU (n=31)	Other (n=39)	Crude (LR) OR	Crude (LR) (95% CI)	Crude (LR) P-value	Adjusted (LMM) OR	Adjusted (LMM) (95% CI)	Adjusted (LMM) P-value
ALP protein family								
ALP1	10 (32.3%)	5 (12.8%)	3.24	(0.97 - 10.79)	0.0560	1.27	(0.86; 1.86)	0.2330
ALP23	0 (0%)	2 (5.1%)	0.00	(0.00 - Inf)	0.9920	0.60	(0.29; 1.2)	0.1540
ALPHA	4 (12.9%)	3 (7.7%)	1.78	(0.37 - 8.61)	0.4750	1.17	(0.74; 1.84)	0.5110
RIB	17 (54.8%)	29 (74.4%)	0.42	(0.15 - 1.15)	0.0910	0.85	(0.6; 1.21)	0.3770
Pilus Islands								
PI1	18 (58.1%)	31 (79.5%)	0.36	(0.12 - 1.03)	0.0560	0.82	(0.61; 1.1)	0.1830
PI2A1	14 (45.2%)	7 (17.9%)	3.76	(1.28 - 11.10)	0.0160	1.40	(1; 1.95)	0.0571
PI2A2	3 (9.7%)	3 (7.7%)	1.29	(0.24 - 6.86)	0.7690	1.02	(0.63; 1.63)	0.9500
PI2A	17 (54.8%)	10 (25.6%)	3.52	(1.28 - 9.65)	0.0140	1.40	(1; 1.96)	0.0517
PI2B	13 (41.9%)	25 (64.1%)	0.40	(0.15 - 1.06)	0.0670	0.83	(0.59; 1.16)	0.2850
SRR Variants								
SRR1	17 (54.8%)	12 (30.8%)	2.73	(1.02 - 7.29)	0.0450	1.28	(0.89; 1.82)	0.1870
SRR2	14 (45.2%)	26 (66.7%)	0.41	(0.16 - 1.09)	0.0730	0.83	(0.57; 1.2)	0.3290
Sip Protein Variants								
Sip.1a	3 (9.7%)	5 (12.8%)	0.73	(0.16 - 3.32)	0.6820	0.87	(0.57; 1.31)	0.4990
Sip.3a	28 (90.3%)	34 (87.2%)	1.37	(0.30 - 6.25)	0.6820	1.15	(0.76; 1.75)	0.4990
Other Virulence factors								
HVGA	14 (45.2%)	26 (66.7%)	0.41	(0.16 - 1.09)	0.0730	0.83	(0.57; 1.2)	0.3290
lmb	30 (96.8%)	39 (100%)	0.00	(0.00 - Inf)	0.9910	0.57	(0.21; 1.54)	0.2740
scpB	30 (96.8%)	38 (97.4%)	0.79	(0.05 - 13.15)	0.8690	0.94	(0.45; 1.95)	0.8740
hylB	28 (90.3%)	37 (94.9%)	0.50	(0.08 - 3.23)	0.4700	0.86	(0.52; 1.43)	0.5640
fbsB	24 (77.4%)	31 (79.5%)	0.88	(0.28 - 2.78)	0.8340	1.01	(0.7; 1.46)	0.9450

Table S8. Molecular Risk factors for Meningitis among Infants

	Meningitis (n=18)	No Meningitis (n=52)	Crude (LR) OR	Crude (LR) (95% CI)	Crude (LR) P-value	Adjusted (LMM) OR	Adjusted (LMM) (95% CI)	Adjusted (LMM) P-value
ALP protein family								
ALP1	4 (22.2%)	11 (21.2%)	1.06	(0.29 - 3.89)	0.9240	1.01	(0.79; 1.3)	0.9260
ALP23	1 (5.6%)	1 (1.9%)	3.00	(0.18 - 50.62)	0.4460	1.28	(0.69; 2.39)	0.4330
ALPHA	1 (5.6%)	6 (11.5%)	0.45	(0.05 - 4.03)	0.4760	0.88	(0.62; 1.24)	0.4730
RIB	12 (66.7%)	34 (65.4%)	1.06	(0.34 - 3.29)	0.9210	1.01	(0.81; 1.26)	0.9230
Pilus Islands								
PI1	11 (61.1%)	38 (73.1%)	0.58	(0.19 - 1.79)	0.3420	0.90	(0.72; 1.12)	0.3470
PI2A1	6 (33.3%)	15 (28.8%)	1.23	(0.39 - 3.89)	0.7210	1.04	(0.83; 1.31)	0.7250
PI2A2	2 (11.1%)	4 (7.7%)	1.50	(0.25 - 8.98)	0.6570	1.09	(0.75; 1.57)	0.6610
PI2A	8 (44.4%)	19 (36.5%)	1.39	(0.47 - 4.12)	0.5530	1.07	(0.86; 1.32)	0.5590
PI2B	9 (50%)	29 (55.8%)	0.79	(0.27 - 2.32)	0.6720	0.96	(0.78; 1.18)	0.6770
SRR Variants								
SRR1	7 (38.9%)	22 (42.3%)	0.87	(0.29 - 2.60)	0.8000	0.97	(0.79; 1.2)	0.8030
SRR2	10 (55.6%)	30 (57.7%)	0.92	(0.31 - 2.70)	0.8750	0.98	(0.8; 1.21)	0.8770
Sip Protein Variants								
Sip.1a	3 (16.7%)	5 (9.6%)	1.88	(0.40 - 8.81)	0.4230	1.14	(0.83; 1.58)	0.4250
Sip.3a	15 (83.3%)	47 (90.4%)	0.53	(0.11 - 2.49)	0.4230	0.88	(0.63; 1.21)	0.4250
Other Virulence factors								
HVGA	10 (55.6%)	30 (57.7%)	0.92	(0.31 - 2.70)	0.8750	0.98	(0.8; 1.21)	0.8770
lmb	18 (100%)	51 (98.1%)	2032169.22	(0.00 - Inf)	0.9920	1.30	(0.54; 3.11)	0.5600
scpB	17 (94.4%)	51 (98.1%)	0.33	(0.02 - 5.62)	0.4460	0.78	(0.42; 1.45)	0.4330
hylB	17 (94.4%)	48 (92.3%)	1.42	(0.15 - 13.58)	0.7630	1.06	(0.71; 1.59)	0.7660
fbsB	14 (77.8%)	41 (78.8%)	0.94	(0.26 - 3.43)	0.9240	0.99	(0.77; 1.27)	0.9260

Table S9. Molecular Risk Factors for Neutropenia among Infants

	Neutropenia (n=13)	No Neutropenia (n=55)	Crude (LR) OR	Crude (LR) (95% CI)	Crude (LR) P-value	Adjusted (LMM) OR	Adjusted (LMM) (95% CI)	Adjusted (LMM) P-value
ALP protein family								
ALP1	1 (7.7%)	14 (25.5%)	0.24	(0.03 - 2.05)	0.1940	0.85	(0.68; 1.07)	0.1700
ALP23	0 (0%)	2 (3.6%)	0.00	(0.00 - Inf)	0.9930	0.82	(0.47; 1.44)	0.4930
ALPHA	2 (15.4%)	5 (9.1%)	1.82	(0.31 - 10.62)	0.5070	1.11	(0.81; 1.52)	0.5090
RIB	10 (76.9%)	34 (61.8%)	2.06	(0.51 - 8.35)	0.3120	1.11	(0.91; 1.35)	0.3130
Pilus Islands								
PI1	11 (84.6%)	36 (65.5%)	2.90	(0.58 - 14.46)	0.1930	1.15	(0.94; 1.41)	0.1840
PI2A1	3 (23.1%)	18 (32.7%)	0.62	(0.15 - 2.52)	0.5010	0.93	(0.76; 1.14)	0.5050
PI2A2	3 (23.1%)	3 (5.5%)	5.20	(0.91 - 29.55)	0.0630	1.40	(1.02; 1.94)	0.0447
PI2A	6 (46.2%)	21 (38.2%)	1.39	(0.41 - 4.69)	0.5980	1.05	(0.87; 1.28)	0.6040
PI2B	5 (38.5%)	31 (56.4%)	0.48	(0.14 - 1.67)	0.2500	0.89	(0.74; 1.08)	0.2510
SRR Variants								
SRR1	5 (38.5%)	24 (43.6%)	0.81	(0.23 - 2.78)	0.7350	0.97	(0.8; 1.17)	0.7390
SRR2	7 (53.8%)	31 (56.4%)	0.90	(0.27 - 3.04)	0.8690	0.98	(0.81; 1.19)	0.8720
Sip Protein Variants								
Sip.1a	3 (23.1%)	5 (9.1%)	3.00	(0.62 - 14.63)	0.1740	1.23	(0.92; 1.65)	0.1640
Sip.3a	10 (76.9%)	50 (90.9%)	0.33	(0.07 - 1.63)	0.1740	0.81	(0.61; 1.09)	0.1640
Other Virulence factors								
HVGA	7 (53.8%)	31 (56.4%)	0.90	(0.27 - 3.04)	0.8690	0.98	(0.81; 1.19)	0.8720
lmb	13 (100%)	54 (98.2%)	Inf	(0.00 - Inf)	0.9920	1.21	(0.55; 2.66)	0.6300
scpB	13 (100%)	53 (96.4%)	Inf	(0.00 - Inf)	0.9930	1.22	(0.7; 2.13)	0.4930
hylB	11 (84.6%)	52 (94.5%)	0.32	(0.05 - 2.13)	0.2370	0.80	(0.56; 1.14)	0.2230
fbsB	8 (61.5%)	45 (81.8%)	0.36	(0.10 - 1.32)	0.1220	0.83	(0.67; 1.04)	0.1160

Table S10. Molecular Risk Factors for Leukopenia among Infants

	Leukopenia (n=16)	No Leukopenia (n=52)	Crude (LR) OR	(95% CI)	P-value	Adjusted (LMM) OR	(95% CI)	P-value
ALP protein family								
ALP1	3 (18.8%)	12 (23.1%)	0.77	(0.19 - 3.16)	0.7160	0.89	(0.64; 1.22)	0.4680
ALP23	1 (6.2%)	1 (1.9%)	3.40	(0.20 - 57.67)	0.3970	1.24	(0.68; 2.29)	0.4850
ALPHA	3 (18.8%)	4 (7.7%)	2.77	(0.55 - 13.96)	0.2170	1.16	(0.79; 1.71)	0.4440
RIB	9 (56.2%)	35 (67.3%)	0.62	(0.20 - 1.96)	0.4200	0.96	(0.72; 1.29)	0.7950
Pilus Islands								
PI1	12 (75%)	35 (67.3%)	1.46	(0.41 - 5.20)	0.5620	1.09	(0.85; 1.41)	0.4990
PI2A1	7 (43.8%)	14 (26.9%)	2.11	(0.66 - 6.75)	0.2080	1.16	(0.87; 1.54)	0.3250
PI2A2	3 (18.8%)	3 (5.8%)	3.77	(0.68 - 20.91)	0.1290	1.32	(0.89; 1.96)	0.1700
PI2A	10 (62.5%)	17 (32.7%)	3.43	(1.07 - 11.01)	0.0380	1.33	(1.01; 1.76)	0.0474
PI2B	5 (31.2%)	31 (59.6%)	0.31	(0.09 - 1.02)	0.0530	0.78	(0.59; 1.03)	0.0848
SRR Variants								
SRR1	9 (56.2%)	20 (38.5%)	2.06	(0.66 - 6.40)	0.2130	1.11	(0.82; 1.5)	0.4920
SRR2	6 (37.5%)	32 (61.5%)	0.37	(0.12 - 1.19)	0.0960	0.81	(0.6; 1.1)	0.1870
Sip Protein Variants								
Sip.1a	4 (25%)	4 (7.7%)	4.00	(0.87 - 18.35)	0.0750	1.32	(0.93; 1.86)	0.1240
Sip.3a	12 (75%)	48 (92.3%)	0.25	(0.05 - 1.15)	0.0750	0.76	(0.54; 1.07)	0.1240
Other Virulence factors								
HVGA	6 (37.5%)	32 (61.5%)	0.37	(0.12 - 1.19)	0.0960	0.81	(0.6; 1.1)	0.1870
lmb	15 (93.8%)	52 (100%)	0.00	(0.00 - Inf)	0.9910	0.49	(0.21; 1.14)	0.1040
scpB	14 (87.5%)	52 (100%)	0.00	(0.00 - Inf)	0.9920	0.47	(0.26; 0.86)	0.0170
hylB	14 (87.5%)	49 (94.2%)	0.43	(0.07 - 2.82)	0.3780	0.87	(0.57; 1.34)	0.5440
fbsB	9 (56.2%)	44 (84.6%)	0.23	(0.07 - 0.81)	0.0220	0.74	(0.55; 1)	0.0524

Table S11. Molecular Risk Factors for Leukocytosis among Infants

	Leukocytosis (n=24)	No Leukocytosis (n=44)	Crude (LR) OR	(95% CI)	P-value	Adjusted (LMM) OR	(95% CI)	P-value
ALP protein family								
ALP1	5 (20.8%)	10 (22.7%)	0.89	(0.27 - 3.00)	0.8570	0.98	(0.74; 1.29)	0.8600
ALP23	1 (4.2%)	1 (2.3%)	1.87	(0.11 - 31.29)	0.6630	1.16	(0.59; 2.3)	0.6640
ALPHA	2 (8.3%)	5 (11.4%)	0.71	(0.13 - 3.96)	0.6950	0.93	(0.64; 1.35)	0.7000
RIB	16 (66.7%)	28 (63.6%)	1.14	(0.40 - 3.26)	0.8030	1.03	(0.81; 1.31)	0.8060
Pilus Islands								
PI1	19 (79.2%)	28 (63.6%)	2.17	(0.68 - 6.93)	0.1910	1.18	(0.92; 1.51)	0.1910
PI2A1	6 (25%)	15 (34.1%)	0.64	(0.21 - 1.96)	0.4400	0.91	(0.71; 1.16)	0.4460
PI2A2	1 (4.2%)	5 (11.4%)	0.34	(0.04 - 3.09)	0.3370	0.82	(0.54; 1.22)	0.3250
PI2A	7 (29.2%)	20 (45.5%)	0.49	(0.17 - 1.43)	0.1930	0.86	(0.68; 1.08)	0.1950
PI2B	15 (62.5%)	21 (47.7%)	1.83	(0.66 - 5.04)	0.2460	1.14	(0.91; 1.44)	0.2500
SRR Variants								
SRR1	9 (37.5%)	20 (45.5%)	0.72	(0.26 - 1.99)	0.5270	0.93	(0.74; 1.17)	0.5330
SRR2	15 (62.5%)	23 (52.3%)	1.52	(0.55 - 4.20)	0.4180	1.10	(0.87; 1.39)	0.4250
Sip Protein Variants								
Sip.1a	2 (8.3%)	6 (13.6%)	0.58	(0.11 - 3.10)	0.5210	0.89	(0.62; 1.27)	0.5240
Sip.3a	22 (91.7%)	38 (86.4%)	1.74	(0.32 - 9.36)	0.5210	1.12	(0.79; 1.61)	0.5240
Other Virulence factors								
HVGA	15 (62.5%)	23 (52.3%)	1.52	(0.55 - 4.20)	0.4180	1.10	(0.87; 1.39)	0.4250
lmb	24 (100%)	43 (97.7%)	Inf	(0.00 - Inf)	0.9920	1.43	(0.55; 3.72)	0.4640
scpB	24 (100%)	42 (95.5%)	Inf	(0.00 - Inf)	0.9920	1.44	(0.73; 2.83)	0.2960
hylB	23 (95.8%)	40 (90.9%)	2.30	(0.24 - 21.83)	0.4680	1.18	(0.76; 1.83)	0.4650
fbsB	20 (83.3%)	33 (75%)	1.67	(0.47 - 5.95)	0.4310	1.12	(0.85; 1.47)	0.4360

Table S12. Molecular Risk Factors of Age of Disease Onset among Infants (LOD vs VLOD)

	VLOD (n=20)	LOD (n=48)	Crude (LR) OR	Crude (LR) (95% CI)	Crude (LR) P-value	Adjusted (LMM) OR	Adjusted (LMM) (95% CI)	Adjusted (LMM) P-value
Hematological Characteristics								
Hb Mean (SD)	10.9 (1.8)	10.9 (2.4)	1	(0.8-1.3)	0.947			
WBC Mean (SD)	10.6 (6.7)	8.6 (6.2)	1	(0.9-1)	0.243			
Leukocytosis N (%)	8 (40)	15 (32.6)	0.7	(0.2-2.2)	0.563			
Leukopenia N (%)	3 (15)	12 (26.1)	2	(0.5-8.1)	0.563			
Platelet Mean (SD)	290.2 (162.7)	365.2 (152.7)	1	(1-1)	0.083			
ANC Mean (SD)	6.4 (5.8)	5.2 (4.4)	0.9	(0.9-1.1)	0.330			
Neutropenia N (%)	3 (15)	10 (21.7)	1.6	(0.4-6.5)	0.529			
ALP protein family								
ALP1	6 (30%)	7 (14.6%)	0.40	(0.11 - 1.39)	0.1480	0.87	(0.56; 1.33)	0.5140
ALP23	1 (5%)	1 (2.1%)	0.40	(0.02 - 6.80)	0.5290	0.89	(0.46; 1.74)	0.7390
ALPHA	4 (20%)	3 (6.2%)	0.27	(0.05 - 1.32)	0.1060	0.77	(0.48; 1.24)	0.2850
RIB	9 (45%)	37 (77.1%)	4.11	(1.36 - 12.46)	0.0120	1.42	(0.96; 2.11)	0.0849
Pilus Islands								
PI1	13 (65%)	36 (75%)	1.62	(0.52 - 4.99)	0.4040	1.04	(0.77; 1.4)	0.7950
PI2A1	11 (55%)	8 (16.7%)	0.16	(0.05 - 0.52)	0.0020	0.60	(0.42; 0.85)	0.0058
PI2A2	0 (0%)	6 (12.5%)	Inf	(0.00 - Inf)	0.9920	1.47	(0.91; 2.38)	0.1190
PI2A	11 (55%)	14 (29.2%)	0.34	(0.11 - 0.99)	0.0480	0.74	(0.51; 1.08)	0.1260
PI2B	8 (40%)	30 (62.5%)	2.50	(0.86 - 7.28)	0.0930	1.19	(0.82; 1.74)	0.3550
SRR Variants								
SRR1	11 (55%)	16 (33.3%)	0.41	(0.14 - 1.19)	0.1000	0.85	(0.56; 1.3)	0.4660
SRR2	9 (45%)	31 (64.6%)	2.23	(0.77 - 6.44)	0.1390	1.12	(0.71; 1.75)	0.6290
Sip Protein Variants								
Sip.1a	1 (5%)	7 (14.6%)	3.24	(0.37 - 28.26)	0.2870	1.30	(0.86; 1.98)	0.2210
Sip.3a	19 (95%)	41 (85.4%)	0.31	(0.04 - 2.69)	0.2870	0.77	(0.5; 1.17)	0.2210
Other Virulence factors								
HVGA	9 (45%)	31 (64.6%)	2.23	(0.77 - 6.44)	0.1390	1.12	(0.71; 1.75)	0.6290
lmb	20 (100%)	47 (97.9%)	0.00	(0.00 - Inf)	0.9920	0.60	(0.24; 1.49)	0.2770
scpB	19 (95%)	47 (97.9%)	2.47	(0.15 - 41.61)	0.5290	1.05	(0.53; 2.07)	0.8950
hylB	20 (100%)	43 (89.6%)	0.00	(0.00 - Inf)	0.9920	0.71	(0.42; 1.18)	0.1880
fbsB	15 (75%)	38 (79.2%)	1.27	(0.37 - 4.33)	0.7060	0.95	(0.63; 1.42)	0.7980

Table S13. Molecular Risk Factors of Age of Disease Onset among Infants (continuous)

	Adjusted for Pop. Structure (LMM) Absolute increase in probability (β)	Standard Error	P-value
ALP protein family			
ALP1	-13.50	38.60	0.7270
ALP23	67.90	48.40	0.1660
ALPHA	32.70	41.30	0.4310
RIB	-57.30	38.20	0.1380
Pilus Islands			
PI1	13.60	22.30	0.5450
PI2A1	84.80	31.30	0.0087
PI2A2	-45.60	43.30	0.2960
PI2A	60.00	32.60	0.0701
PI2B	-35.10	32.20	0.2800
SRR Variants			
SRR1	27.30	40.50	0.5030
SRR2	-31.00	46.70	0.5090
Sip Protein Variants			
Sip.1a	-19.10	36.60	0.6040
Sip.3a	19.10	36.60	0.6040
Other Virulence factors			
HVGA	-31.00	46.70	0.5090
scpB	-14.30	49.60	0.7750
hylB	44.30	45.00	0.3290
fbsB	-7.25	38.90	0.8530