Supplementary Tables

Table S1. Infectious manifestations, non-infectious clinical features, genetic subgroups, and treatment modalities in patients with chronic granulomatous disease

Category	Variable	Value
Infections	Pneumonia, n (%)	54 (73.0)
	Deep tissue abscess, n (%)	18 (24.3)
	Sepsis, n (%)	7 (9.5)
	Aspergillus infection, n (%)	17 (23.0)
	Number of Aspergillus episodes, median (range)	2 (0-24)
	Tuberculosis, n (%)	29 (39.2)
Non-infectious clinical manifestations	Chronic diarrhea, n (%)	17 (23.0)
	IBD-like colitis, n (%)	7 (9.5)
	Bronchiectasis, n (%)	6 (8.1)
	Atelectasis, n (%)	15 (20.3)
	Growth retardation, n (%)	38 (51.4)
Genetic defect	NCF1, n (%)	13 (17.6)
	NCF2, n (%)	6 (8.1)
	CYBA, n (%)	15 (20.3)
	CYBB, n (%)	16 (21.6)
	No genetic diagnosis available, n (%)	24 (32.4)
Treatments	IFN-γ therapy, n (%)	42 (56.8)
	IVIG therapy, n (%)	7 (9.5)
	Granulocyte transfusion, n (%)	6 (8.1)
	HSCT, n (%)	9 (12.2)

Deep tissue abscess was defined as the presence of at least one abscess involving hepatic, renal, perirectal, gluteal, splenic, or brain tissue. CYBA, cytochrome b-245 alpha chain; CYBB, cytochrome b-245 beta chain; HSCT, hematopoietic stem cell transplantation; IBD, inflammatory bowel disease; IFN-γ, interferon-gamma; IVIG, intravenous immunoglobulin; NCF1, neutrophil cytosolic factor 1; NCF2, neutrophil cytosolic factor 2.

Table S2. Factors associated with hospitalization count among patients with a history of hospitalization

Variable	B	Standard Error	Wald χ^2	p value	IRR	95% CI (Lower–Upper)
Outpatient SII (/100)	−0.037	0.024	2.423	0.120	0.96	0.92 – 1.01
Outpatient PNI	−0.017	0.012	1.835	0.175	0.98	0.96 – 1.01

Associations with hospitalization count were assessed using negative binomial regression due to overdispersion of count data. Hospitalization count was included as the dependent variable, while outpatient SII (/100) and outpatient PNI were entered simultaneously as covariates. CI, confidence interval; IRR, incidence rate ratio; PNI, prognostic nutritional index; SII, systemic immune–inflammation index.

Table S3. Correlation between outpatient SII (/100) and PNI values and hospitalization count

Variables	ρ (rho)	p value	N
Hospitalization count – outpatient SII (/100)	-0.015	0.911	61
Hospitalization count – outpatient PNI	-0.009	0.946	61

Correlations between outpatient SII (/100) and PNI values and hospitalization count were assessed using Spearman's rank correlation test due to the non-normal distribution of hospitalization count. PNI, prognostic nutritional index; SII, systemic immune–inflammation index.

Table S4. Overall survival outcomes according to inpatient PNI groups

Variable	Group	N	Events (n)	Median survival (months)	95% CI	Mean survival (months)	95% CI
Inpatient PNI	Low	7	5	12.2	7.4–16.9	66.0	0.1–132.0
	High	54	7	Not reached	—	379.7	339.4–419.9

Log-rank $\chi^2 = 17.16$, df = 1, p value < 0.001.

Survival distributions between low and high inpatient PNI groups were compared using the log-rank test. Patients were classified into groups using a predefined PNI cut-off value of 40 for exploratory purposes. Median survival time could not be estimated in the high inpatient PNI group due to a low number of observed events and a high proportion of censored observations; therefore, mean survival time estimates are presented. CI, confidence interval; df, degrees of freedom; PNI, prognostic nutritional index.

Table S5. Association between outpatient inflammatory and nutritional indices and subsequent infection development

Infection type	Index	Infection present (mean rank)	Infection absent (mean rank)	U	Z	p value
Pneumonia	Outpatient SII(/100)	33.22	18.36	136.0	-2.550	0.011
	Outpatient PNI	26.77	31.17	169.5	-0.766	0.444
Sepsis	Outpatient SII(/100)	49.36	36.26	151.5	-1.533	0.125
	Outpatient PNI	34.93	37.77	216.5	-0.332	0.740
Deep tissue abscess	Outpatient SII(/100)	40.09	29.44	359.0	-1.827	0.068
	Outpatient PNI	35.66	43.22	401.0	-1.298	0.194
Tuberculosis	Outpatient SII(/100)	35.00	39.11	580.0	-0.803	0.422
	Outpatient PNI	41.74	34.77	529.0	-1.362	0.172
Aspergillus infection	Outpatient SII(/100)	35.94	37.96	458.0	-0.341	0.733
	Outpatient PNI	33.88	38.58	423.0	-0.790	0.429

All indices were measured during clinically stable outpatient visits. Comparisons between patients with and without subsequent infections were performed using the Mann–Whitney U test due to the non-normal distribution of variables. Results are presented as mean ranks. Outpatient SII values were divided by 100 for readability. A two-sided p value < 0.05 was considered statistically significant. SII, systemic immune–inflammation index; PNI, prognostic nutritional index; U, Mann–Whitney U statistic; Z, standardized test statistic.

Table S6. Association between outpatient inflammatory and nutritional indices and non-infectious clinical manifestations

Clinical condition	Index	Manifestation present (mean rank)	Manifestation absent (mean rank)	U	Z	p value
Chronic diarrhea	Outpatient SII (/100)	39.50	36.90	450.0	-0.437	0.662
	Outpatient PNI	37.03	37.64	476.5	-0.103	0.918
IBD	Outpatient SII (/100)	37.36	37.51	233.5	-0.018	0.985
	Outpatient PNI	33.93	37.87	209.5	-0.462	0.644
Bronchiectasis	Outpatient SII (/100)	37.50	37.50	204.0	0.000	1.000
	Outpatient PNI	20.42	39.01	101.5	-2.030	0.042
Atelectasis	Outpatient SII (/100)	37.83	37.42	437.5	-0.067	0.946
	Outpatient PNI	34.13	38.36	392.0	-0.679	0.497
Growth retardation	Outpatient SII (/100)	39.00	35.92	627.0	-0.616	0.538
	Outpatient PNI	37.01	38.01	665.5	-0.200	0.841

Outpatient SII (/100) and outpatient PNI were measured during clinically stable outpatient visits. Associations between outpatient inflammatory and nutritional indices and non-infectious clinical manifestations were assessed using the Mann–Whitney U test due to the non-normal distribution of index values. Results are presented as mean ranks. Outpatient SII values were divided by 100 for interpretability. A two-sided p value < 0.05 was considered statistically significant. SII, systemic immune–inflammation index; PNI, prognostic nutritional index; U, Mann–Whitney U statistic; Z, standardized test statistic; IBD, inflammatory bowel disease.