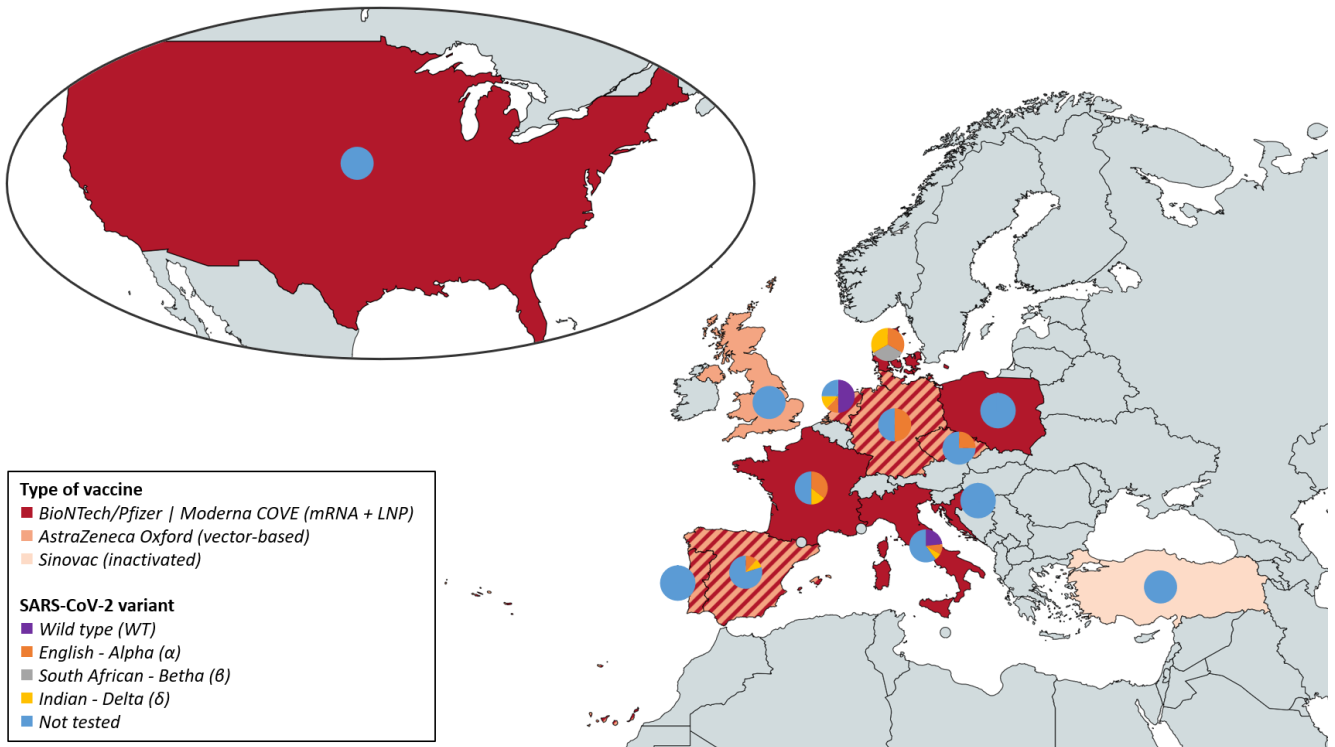


Supplemental Figure 1. Type of vaccine and SARS-Cov-2 variants distribution according geographic areas.



Supplemental Table 1. COVID-19 clinical presentation according to different malignancies.

| | Alive (d30) | | | | | | | | Death (d30) | | | | | | | |
|---------------------------|--------------|------|-------------------------|------|--|------|--------------------|------|--------------|-----|-------------------------|-----|--|-----|--------------------|-----|
| | Asymptomatic | | Extrapulmonary symptoms | | Extrapulmonary symptoms + Pulmonary symptoms | | Pulmonary symptoms | | Asymptomatic | | Extrapulmonary symptoms | | Extrapulmonary symptoms + Pulmonary symptoms | | Pulmonary symptoms | |
| | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % | <i>n</i> | % |
| Acute lymphoid leukemia | 1 | 0.9 | 1.0 | 0.9 | 1.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | # | 0.0 |
| Chronic lymphoid leukemia | 6 | 5.3 | 3.0 | 2.7 | 10.0 | 8.8 | 7.0 | 6.2 | 1.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | # | 0.9 |
| Acute myeloid leukemia | 1 | 0.9 | 2.0 | 1.8 | 1.0 | 0.9 | 1.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | # | 0.0 |
| Chronic myeloid leukemia | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | # | 0.0 |
| Myelodysplastic syndrome | 2 | 1.8 | 1.0 | 0.9 | 0.0 | 0.0 | 2.0 | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 1.8 | # | 0.0 |
| Hodgkin lymphoma | 1 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 1.8 | 0.0 | 0.0 | 1.0 | 0.9 | 0.0 | 0.0 | # | 0.0 |
| Non-Hodgkin lymphoma | 4 | 3.5 | 1.0 | 0.9 | 13.0 | 11.5 | 12.0 | 10.6 | 0.0 | 0.0 | 1.0 | 0.9 | 1.0 | 0.9 | # | 3.5 |
| Myelofibrosis | 0 | 0.0 | 1.0 | 0.9 | 1.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | # | 0.9 |
| Polycythemia vera | 1 | 0.9 | 0.0 | 0.0 | 1.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | # | 0.0 |
| Systemic mastocytosis | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | # | 0.9 |
| Multiple myeloma | 6 | 5.3 | 2.0 | 1.8 | 7.0 | 6.2 | 4.0 | 3.5 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.9 | # | 0.0 |
| Aplastic anemia | 0 | 0.0 | 1.0 | 0.9 | 1.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | # | 0.0 |
| Overall | 22 | 19.5 | 12.0 | 10.6 | 35.0 | 31.0 | 30.0 | 26.5 | 1.0 | 0.9 | 2.0 | 1.8 | 4.0 | 3.5 | # | 6.2 |

Supplemental Table 2. Overall mortality predictors in vaccinated COVID-19 HM patients

(univariable and multivariable analysis).

| | Univariable model | | | | Multivariable model | | | |
|--|-------------------|-------|----------|--------|---------------------|-------|----------|--------|
| | p value | HR | 95.0% CI | | p value | HR | 95.0% CI | |
| | | | Lower | Upper | | | Lower | Upper |
| Sex | | | | | | | | |
| Female | - | - | - | - | - | - | - | - |
| Male | 0.266 | 0.552 | 0.194 | 1.574 | - | - | - | - |
| Age | 0.046 | 1.044 | 1.001 | 1.088 | 0.035 | 1.053 | 1.004 | 1.105 |
| Malignancy status at COVID-19 diagnosis | | | | | | | | |
| Controlled disease | - | - | - | - | - | - | - | - |
| Active disease | 0.725 | 0.828 | 0.290 | 2.362 | - | - | - | - |
| Unknown | 0.986 | 0.000 | - | - | - | - | - | - |
| Hematological malignancy | | | | | | | | |
| Hodgkin lymphoma | - | - | - | - | - | - | - | - |
| Chronic lymphoid leukemia | 0.172 | 0.188 | 0.017 | 2.074 | - | - | - | - |
| Acute myeloid leukemia | 0.990 | 0.000 | - | - | - | - | - | - |
| Chronic myeloid leukemia | 0.995 | 0.000 | - | - | - | - | - | - |
| Acute lymphoid leukemia | 0.994 | 0.000 | - | - | - | - | - | - |
| Non-Hodgkin lymphoma | 0.612 | 0.578 | 0.070 | 4.809 | - | - | - | - |
| Aplastic anemia | 0.995 | 0.000 | - | - | - | - | - | - |
| Multiple myeloma | 0.256 | 0.200 | 0.013 | 3.207 | - | - | - | - |
| Myelodysplastic syndrome | 0.381 | 2.946 | 0.262 | 33.108 | - | - | - | - |
| Myelofibrosis | 0.820 | 1.383 | 0.085 | 22.531 | - | - | - | - |
| Polycythemia vera | 0.995 | 0.000 | - | - | - | - | - | - |
| Systemic mastocytosis | 0.870 | 1.262 | 0.079 | 20.226 | - | - | - | - |
| COVID-19 infection | | | | | | | | |
| Asymptomatic | - | - | - | - | - | - | - | - |
| Mild infection | 0.554 | 2.309 | 0.144 | 36.950 | 0.405 | 3.263 | 0.202 | 52.630 |
| Severe infection | 0.290 | 3.100 | 0.381 | 25.206 | 0.204 | 3.899 | 0.477 | 31.850 |
| Critical infection | 0.064 | 7.637 | 0.890 | 65.519 | 0.048 | 9.533 | 1.023 | 88.816 |
| Baseline characteristics | | | | | | | | |
| Chronic cardiopathy | 0.013 | 4.381 | 1.374 | 13.970 | 0.207 | 2.328 | 0.626 | 8.657 |
| Chronic pulmonary disease | 0.148 | 2.569 | 0.715 | 9.227 | - | - | - | - |
| Diabetes mellitus | 0.960 | 0.968 | 0.270 | 3.471 | - | - | - | - |
| Liver disease | 0.895 | 0.872 | 0.114 | 6.670 | - | - | - | - |
| Obesity | 0.620 | 0.047 | - | - | - | - | - | - |
| Renal impairment | 0.077 | 3.859 | 0.862 | 17.269 | 0.227 | 2.950 | 0.510 | 17.059 |
| Smoking history | 0.486 | 1.574 | 0.439 | 5.646 | - | - | - | - |
| Neutrophils, cells/mm³ | | | | | | | | |
| ≤ 500 | - | - | - | - | - | - | - | - |
| 501 - 999 | 0.286 | 0.221 | 0.014 | 3.542 | 0.926 | 0.867 | 0.043 | 17.598 |
| ≥ 1000 | 0.079 | 0.160 | 0.021 | 1.239 | 0.583 | 0.510 | 0.046 | 5.665 |
| Lymphocytes, cells/mm³ | | | | | | | | |
| ≤ 200 | - | - | - | - | - | - | - | - |
| 201 - 499 | 0.690 | 1.588 | 0.164 | 15.354 | - | - | - | - |
| ≥ 500 | 0.848 | 0.817 | 0.103 | 6.452 | - | - | - | - |
| Last treatment for hematological malignancy prior to COVID-19 | | | | | | | | |
| In the last month before COVID-19 | - | - | - | - | - | - | - | - |
| In the last 3 months before COVID-19 | 0.150 | 3.131 | 0.663 | 14.790 | - | - | - | - |

| | Univariable model | | | | Multivariable model | | | |
|--|-------------------|-------|----------|--------|---------------------|----|----------|-------|
| | p value | HR | 95.0% CI | | p value | HR | 95.0% CI | |
| | | | Lower | Upper | | | Lower | Upper |
| > 3 months before COVID-19 | 0.856 | 1.154 | 0.245 | 5.435 | - | - | - | - |
| Unknown | 0.116 | 5.303 | 0.661 | 42.565 | - | - | - | - |
| Not applicable | 0.433 | 0.435 | 0.054 | 3.479 | - | - | - | - |
| Last chemotherapy prior to COVID-19 | | | | | | | | |
| In the last month before COVID-19 | - | - | - | - | - | - | - | - |
| In the last 3 months before COVID-19 | 0.123 | 3.459 | 0.715 | 16.726 | - | - | - | - |
| > 3 months before COVID-19 | 0.755 | 1.285 | 0.267 | 6.187 | - | - | - | - |

Statistical analysis

Categorical variables were summarized with frequencies and percentages, while continuous variables with median, interquartile range (IQR) and absolute range. Proportions between categories were compared with Fisher's exact test. Additionally, Cox proportional hazard models were developed to evaluate the variables associated to mortality. Variables with p values <0.1 in the univariable models were included into the multivariable one, where Wald backward method was employed. A p value ≤ 0.05 was considered significant. No *a priori* sample size calculation was determined. SPSSv25.0 was employed for statistical analyses (SPSS, IBM Corp., Chicago, IL, United States).

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