**Supplementary Appendix**

**Tables
Supplemental Table S1. Search strings used for the review**

|  |  |
| --- | --- |
| **Set** | **Keywords** |
| 1  | Leukemia, Leukaemia, Lymphocytic, Chronic, B-Cell, CLL, B-CLL, BCLL, B-cell, B-lymphocytic, Lymphoblastic, Lymphatic, Lymphoplasmacytoid, Lymphoplasmacytic, Small cell, SLL |
| 2  | COVID-19, COVID-19 Vaccines, COVID-19 serotherapy, COVID-19 Nucleic Acid Testing, COVID-19 Serological Testing, COVID-19 Testing, SARS-CoV-2, Severe Acute Respiratory Syndrome Coronavirus 2, NCOV, 2019 NCOV, coronavirus, COV |

**Supplemental Table S2.** Overview of studies included in the review

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Number** | **Author** | **Study design** | **Number of CLL patients, n** | **Median age, years** | **Name and type of assay used** | **Type of vaccine received** |
| 1 | Sun et al (2021)38 | Prospective | 58 | 69 | * **Ultra-deep TCRß sequencing** (detection of anti-spike antibodies)
* **T-MAP COVID ImmuneCODE database** (detection of SARS-CoV-2 spike-specific T cells)
 | * BNT162b2
* mRNA-1273
* Ad26.COV2.S
 |
| 2 | Dong et al (2021)27 | Observational | 23 | 66 | * **Two-step ELISA** (adapted from the Krammer protocol; measurement of IgG response against SARS-CoV-2 spike protein)
 | * mRNA-1273
 |
| 3 | Itchaki et al (2021)45 | Prospective | 68 | 68 | * **Architect AdviseDx SARS-CoV-2 IgG II** (qualitative/semi-quantitative detection of anti-spike antibodies)
* **R&D Systems® ELISA Kits** (detection of SARS-Cov-2 spike-specific T cells by quantification of IFNγ)
 | * BNT162b2
 |
| 4 | Gong et al (2022)65 | Meta-analysis | 1709 | NR | * Anti-SARS-COV-2 IgG spike (S) protein antibody levels and neutralizing antibody titers against receptor-binding domain (cutoffs as per manufacturer)
 | Majority of patients vaccinated with 2 mRNA-based vaccines |
| 5 | Shen et al (2021)32 | Prospective | 160 | 72 | * **SARS-CoV-2 IgG II Quant assay®** (measurement of anti-spike antibodies)
 | * ChAdOx1-S
* BNT162b2
* mRNA-1273
 |
| 6 | Molica et al (2021)29 | Prospective | 70 | 72 | * **LIAISON® SARS-CoV-2 S1/S2 IgG test** (quantitative detection of lgG antibodies to S1/S2 antigens of SARS-CoV-2)
 | * BNT162b2
 |
| 7 | Parry et al (2022)30 | Prospective | 500 | 67 | * **Roche Elecsys® electrochemiluminescence immunoassay (ECLIA)** (measurement of antibodies to SARS-CoV-2 nucleocapsid)
* **Dried blood spot ELISA analysis** (detection of IgG, IgA, and IgM antibody isotypes to stabilized trimeric SARS-CoV-2 spike glycoprotein)
* **cobas® 6000 analyzer series** (quantification of IgG, IgA, and IgM antibodies)
* **Neutralization and pseudoneutralization assay**
* **Pseudotyped-virus neutralization**
 | * BNT162b2
* ChAdOx1
 |
| 8 | Bagacean et al (2022)36 | Registry | 530 | 71 | * **SARS-CoV-2 IgG II Quant assay®** (measurement of total lgG antibodies to the SARs-CoV-2 S receptor-binding domain protein)
* Measurement of anti-spike antibodies with available assays approved by the French Ministry of Health
 | * BNT162b2
* mRNA-1273
 |
| 9 | Bergman et al (2021)28 | Prospective | 90 | NR | * **Elecsys® Anti-SARS-CoV-2 S** (measurement of total antibodies to the SARs-CoV-2 S receptor-binding domain protein)
 | * BNT162b2
 |
| 10 | Herishanu et al (2022)33 | Prospective | 172 | 72 | * **Architect AdviseDx SARS-CoV-2 IgG II**
* **Surrogate viral assay** (test of antiviral humoral response based on highly infectious recombinant vesicular stomatitis virus bearing SARS-CoV-2 spike glycoprotein S)
 | * BNT162b2
 |
| 11 | Molica et al (2022)42 | Meta-analysis | 2082 | NR | - | -  |
| 12 | Teh et al (2021)21 | Meta-analysis | 1557 | NR | - | - |
| 13 | Gagelmann et al (2021)20 | Meta-analysis | 1753 | NR | - | - |
| 14 | Benjamini et al (2022)41 | Prospective | 373 | 70 | * **LIAISON® SARS-CoV-2 S1/S2 IgG assay**
* **Architect AdviseDx SARS-CoV-2 IgG II**
* **ELISA**
* **Surrogate viral assay**
 | * BNT162b2
 |
| 15 | Ujjani et al (2022)23 | Prospective | 37 | 65 | * **Elecsys® Anti-SARS-CoV-2 S**
* **SARS-CoV-2 spike D614G pseudotyped lentivirus neutralization assay**
 | * BNT162b2
* mRNA-1273
* Ad26.COV2.S
 |
| 16 | Haydu et al (2022)35 | Prospective | 36 | 62 | * **Elecsys® Anti-SARS-CoV-2 S**
* **Roche Elecsys® ECLIA**
 | * BNT162b2
* mRNA-1273
* Ad26.COV2.S
 |
| 17 | Del Poeta et al (2021)40 | Prospective | 46 | NR | * **Chemo‐luminescence Anti‐SARS‐CoV‐2 immunoassay** (quantitative detectionof lgG antibodies to the SARS-CoV-2 protein)
 | * BMT162b2
 |
| 18 | Roeker et al (2021)39 | Prospective | 44 | 71 | * **LIAISON® SARS-CoV-2 S1/S2 IgG assay**
 | * BNT162b2
* mRNA-1273
 |
| 19 | Tadmor et al (2021)37 | Prospective | 84 | 69 | * **Architect AdviseDx SARS-CoV-2 IgG II**
 | * BNT162b2
 |
| 20 | Herishanu et al (2021)31 | Prospective | 167 | 71 | * **Elecsys® Anti-SARS-CoV-2 S**
 | * BNT162b2
 |
| 21 | Greenberger et al (2021)25 | Prospective | 650 | 66a | * **Roche Elecsys® ECLIA**
 | * mRNA-1273
* BNT162b2
 |
| 22 | Greenberger et al (2021)34 | Prospective | 25 | 66a,b | * **Elecsys® Anti-SARS-CoV-2 S**
 | * mRNA-1273
* BNT162b2
 |
| 23 | Herzog Tzarfati et al (2021)43 | Prospective | 34 | 70a | * **LIAISON® SARS-CoV-2 S1/S2 IgG assay**
 | * BNT162b2
 |
| 24 | Haggenburg et al (2022)44 | Prospective | 94c | NR | * **Bead-based multiplex immune assay** (measurement of SARS-CoV-2-specific antibodies)
 | * mRNA-1273
 |
| 25 | Herishanu et al (2002)46 | Prospective | 61 | 69 | * **Elecsys® Anti-SARS-CoV-2 S**
 | * NR
 |
| 26 | Giuliano et al (2022)26 | Prospective | 301c | NR | * **ELISA** adapted from Krammer protocol
 | * mRNA-1273
 |
| 27 | Šušol et al (2022)24 | Prospective | 53 | NR | * **R&D Systems® ELISA Kits**
* **Inhouse in-vivo virus neutralization test**
 | * BNT162b2
 |

aMedian/mean (where specified) age of all study participants, including histologies other than CLL; bMean age; cCombination of patients with haematologic malignancies. CLL = chronic lymphocytic leukemia; n = number; NR = not reported.