

Table S1 Survival time of patients who did not survive

Patient No.	Year of birth	Diagnosis	Diagnosis confirmed	Palliative status	Date of death	Survival time, months	Treatment regimens after acquiring the palliative status
Experimental cohort							
1	1960	Left-sided breast cancer. T2N0M0, grade IIA; radical sector resection + external beam radiation therapy in 2018. Tamoxifen. Progression in September 2019: recurrent breast cancer within the postoperative cicatrix; excision on September 24, 2019. Metastatic spread to lymph nodes and soft tissues of the scalp	January 2018	November 2019	March 2024	52	Fulvestrant (N30), since Jan. 2020 until Oct. 7, 2022 Aromatase inhibitors (anastrozole) + bisphosphonates (paclitaxel). Karanahan: Nov. 09, 2019; Nov. 28, 2019; Dec. 15, 2022; Jan. 12, 2023; Feb. 7, 2023
2	1971	Synchronous bilateral breast cancer: right-sided breast cancer T2N2M1, left-sided breast cancer T2NxM1, bone and liver metastases	October 2019	October 2019	April 2020	6	Karanahan: Nov. 9, 2019; Dec. 13, 2019; Jan. 9, 2020
3	1959	Left-sided breast cancer T2N0M0, grade IIA. Combination therapy in 2014 (left-sided radical sector resection; radiation therapy until June 2014 + tamoxifen since June 2014 until September 2017. Progression: metastatic spread to skin of the anterior thorax and liver; left-sided exudative pleurisy. In October 2017, recurrent breast cancer. Therapy with fulvestrant (N6) until May 10, 2018. Positive local dynamics (for cutaneous metastases and pleurisy). Therapy with fulvestrant during 13 months, until January 2019; negative dynamics for cutaneous metastases. Therapy with aromatase inhibitors until July 2020. Progression of cutaneous metastases, metastases to the right-sided breast, bone metastases (fractured neck of right femur), and liver metastasis	January 2014	December 2020	December 2022	24	Aromatase inhibitors since Dec. 2020 until Aug. 2021, nine therapy courses using everolimus and anastrozole until Feb. 22, 2022, two therapy courses using palbociclib + fulvestrant until Apr. 26, 2022, three therapy courses using ribociclib + fulvestrant until Aug. 9, 2022, five therapy courses using ribociclib + fulvestrant until Oct. 18, 2022, no treatment since October 2022. Karanahan: Jan. 25, 2021; Feb. 15, 2021; March 5, 2021
4	1949	Right-sided breast cancer T3N1M0. Combination therapy in 2019 (right-sided radical Madden mastectomy, adjuvant multiagent chemotherapy (AC4 regimen) was followed by adjuvant paclitaxel mono-chemotherapy (N4), external beam radiation therapy, administration of tamoxifen until 2020). Metastatic spread to skin, metastatic pleurisy, and bone metastases (2021)	January 2018	April 2021	April 2023	24	Aromatase inhibitors + bisphosphonates since June 2021 until July 2023. Karanahan: Apr. 8, 2021; Apr. 30, 2021; May 24, 2021
5	1959	Left-sided breast cancer T4N2M1 (metastatic spread to bones and lungs). Multiagent chemotherapy (AC8 regimen) starting September 23, 2019. Positive dynamics. Fulvestrant + palbociclib + bisphosphonates N3 starting December 19, 2019. Progression (bilateral hydrothorax), pleurocentesis performed November 29, 2019. Chemotherapy with paclitaxel (N4) until March 26, 2020; positive dynamics for lung metastases; poor chemotherapy tolerance. Progression (for lung and bone metastases), negative local dynamics (multiple cutaneous metastases)	January 2019	April 2021	May 2023	25	Since Sept. 2022 – capecitabine. Karanahan: May 11, 2021; June 1, 2021; June 29, 2021; Nov. 24, 2021; Dec. 15, 2021; Jan. 12, 2022
6	1956	Right-sided breast cancer T4NxM0, grade III B. Tamoxifen therapy starting October 2017. Progression since February 2018 (local, intradermal metastases). Administration of aromatase inhibitors until September 2020. Stabilization. Administration of aromatase inhibitors until December 2020. Negative local dynamics. Administration of fulvestrant (N4) until February 25, 2021. Negative local dynamics. Four courses of multiagent chemotherapy (AC regimen) until June 10, 2021. Negative local dynamics	February 2017	July 2021	May 2022	10	Twelve courses of paclitaxel chemotherapy weekly until Oct. 12, 2021. Karanahan: Nov. 16, 2021; Dec. 7, 2021
7	1982	Left-sided breast cancer T4N1M1, liver metastases. Four courses of multiagent chemotherapy (AC regimen), four courses of mono-chemotherapy with docetaxel, administration of nine doses of trastuzumab until September 2019, brain metastases. In October 2019, microsurgical resection of a neoplasms in the left cerebellar hemisphere, complicated by left-sided trochlear nerve palsy	January 2018	September 2019	July 2022	34	Capecitabine + trastuzumab until January 2020, chemotarget therapy (vinorelbine + trastuzumab + pertuzumab) until September 2020, four cycles of trastuzumab + lapatinib, six cycles of targeted therapy (Kadcyla®), chemotarget therapy (paclitaxel + trastuzumab), ten cycles of multiagent chemotarget therapy (carboplatin + Gemzar® + Herceptin®), two cycles of monochemotarget therapy (Halaven® + Herceptin®), administration of 43 doses of trastuzumab. Karanahan: Apr. 19, 2022; May 16, 2022
8	–	Left-sided breast cancer T4bN2aM0, grade III B (secondary edematous infiltrative form, triple-negative type). Multiagent chemotherapy. Growth continued since January 2022	February 2021	March 2022	June 2022	3	Karanahan: Apr. 20, 2022; May 16, 2022
9	1962	Right-sided breast cancer. T4NXM0, skin affected, ulceration stage, untreated	October 2022	February 2023	August 2023	6	Karanahan: Mar. 3, 2023; Apr. 4, 2023; June 2, 2023; Aug. 16, 2023
Historical control							
C-1	1957	Left-sided breast cancer T4N3M0 (ER 8, PR 7, HER2/neu 0, Ki67 40%), grade III B. Administration of tamoxifen during 3.5 months. Positive dynamics according to clinical manifestations (edema). Negative local dynamics (R-logically). December 15, 2020 – radical Madden mastectomy. Adjuvant multiagent chemotherapy: AC4 regimen, three doses of paclitaxel until June 22, 2021. Invasive ductal carcinoma, grade II; tumor emboli in lymphatic vessels; metastases in 15 lymph nodes. External beam gamma-radiation therapy until November 2, 2021. Administration of aromatase inhibitors until June 2022. Progression (multiple bone metastases). Grade 3 thrombocytopenia	June 2020	March 2022	September 2022	6	Adjuvant therapy with aromatase inhibitors + bisphosphonates
C-2	1960	Right-sided breast cancer T2N2M0 (ER 8, PR 5, HER2/neu 1+, Ki67 20-25%), grade IIIA. Combination therapy: radical sector resection of the right breast. Four courses of adjuvant multiagent chemotherapy (AC4 regime), radiation therapy until April 2019. Multiple liver and bone metastases. Progression: continued growth of nidi in the liver. Chemotherapy with eribulin (N4), negative dynamics. Chemotherapy with paclitaxel (N6), negative dynamics. Multiagent chemotherapy with gemcitabine + carboplatin (N1) on November 9, 2021. Cholestasis. Liver transaminase level is elevated (ninefold). Mild anemia of complex genesis. Ascites	September 2018	May 2020	December 2021	19	Tamoxifen 20 mg/day
C-3	1956	Right-sided breast cancer T2N0M0 (ER 5, PR 8, HER2/neu 0, Ki67 40%), grade IIA. Radical Madden mastectomy performed on July 24, 2019. Four courses of adjuvant multiagent chemotherapy (AC regimen). December 4, 2019 – Tamoxifen for two months. January 2020 – progression: lung and bone metastases. Four courses of chemotherapy (paclitaxel) until April 21, 2020. Administration of bisphosphonates (N3) until May 13, 2020. Positive dynamics. Four courses of paclitaxel until August 4, 2020. Stabilization. Administration of aromatase inhibitors + bisphosphonates (N12). Moderate anemia of complex genesis. Thrombocytopenia. Mixed bronchial asthma, partially controlled. Primary hypothyroidism	September 2018	August 2021	September 2021	1	Paclitaxel
C-4	1977	Left-sided breast cancer T3N2M0, grade IIIA. Left-sided radical Madden mastectomy performed on February 11, 2020. Three courses of adjuvant multiagent chemotherapy (AC regime) until June 29, 2020. Chemotherapy was discontinued because of grade 2–3 hepatic toxicity. Administration of luteinizing hormone-releasing hormone since July 29, 2020 + anastrozole. External beam radiation therapy was performed in August 2020. October 14, 2022 – progression: rib, vertebral, and liver metastases. Administration of luteinizing hormone-releasing hormone starting October 21, 2022 + bisphosphonates on September 23, 2022 Hormone therapy with fulvestrant (N8) starting May 1, 2023. Five courses of ribociclib therapy. Progression: growth of metastases to the liver, bones, and pancreas. In 2014, the patient was diagnosed with HIV; stage 4B secondary infections; permanent antiretroviral therapy. Since 2014, chronic hepatitis C virus infection of minimal activity. Chronic pain syndrome (grade II-III). Weight deficit. Cachexia	November 2019	March 2023	June 2023	3	
C-5	1956	Right-sided breast cancer T4NxM0 (ER 8, PR 6, HER-2/neu 0, Ki67 31%), grade III B. Class 3 obesity. Administration of tamoxifen starting October, 2017. Progression since February 2018 (local progression, intradermal metastases). Administration of aromatase inhibitors until December 2020. Negative local dynamics. Fulvestrant (N4) until February 25, 2021. Negative local dynamics. Four courses of multiagent chemotherapy (AC regimen) until June 10, 2021. Negative local dynamics according to clinical manifestations. Twelve courses of paclitaxel therapy weekly until October 12, 2021. Negative local dynamics. Administration of cyclophosphamide (N2) until December 2021. Negative dynamics as of January 2022. Emergence of a metastatic nidus in the liver (according to the MSCT data)	February 2017	February 2022	May 2022	3	Aromatase inhibitors