**Table 1. Combination therapy for breast cancer (n = 90)**

|  |  |
| --- | --- |
| **Parameter** | **Value** |
| BC stage, n (%): |  |
| I | 13 (14.4) |
| II | 43 (47.8) |
| III | 34 (37.8) |
| Anthracycline-based CT, n (%) | 90 (100) |
| Time from the end of anthracyclines-based CT, months | 36 [11.8; 56.5] |
| Anti-HER2 treatment, n (%) | 27 (30) |
| Hormonal therapy, n (%) | 57 (63.3) |
| Surgery, n (%) | 90 (100) |
| Chest radiation therapy, n (%) | 68 (75.6) |
| Left-sided BC, n (%) | 42 (46.7) |

BC, breast cancer; CT, chemotherapy; HER2, human epidermal growth factor receptor 2

The values are given as patient numbers (n) and their proportions in the study sample (%); continuous variables are given as median (Me), lower and upper quartiles [25%; 75%]

**Table 2. Main characteristics of the patients who have undergone cardiotoxic therapy for breast cancer (n = 90)**

|  |  |
| --- | --- |
| **Parameter** | **Value** |
| Clinical characteristics |
| Systolic blood pressure, mmHg | 110 [100; 125] |
| Diastolic blood pressure, mmHg | 75 [70; 80] |
| Heart rate, bpm | 66 [60; 72] |
| Body mass index, kg/m2 | 25.7 [22.2; 29.8] |
| Waist circumference, cm | 85 [77; 95.5] |
| Hemoglobin, g/dL | 13.3 [12.8; 13.9] |
| Total cholesterol, mmol/L | 5.6 [4.8; 6.4] |
| Triglycerides, mmol/L | 1.1 [0.9; 1.7] |
| HDL cholesterol, mmol/L | 1.6 [1.3; 1.8] |
| LDL cholesterol, mmol/L | 3.4 [2.6; 4.1] |
| Glomerular filtration rate, mL/min/1.73 m2 | 90 [81; 101] |
| Glucose, mmol/L | 4.8 [4.5; 5.2] |
| hsCRP, mg/L | 1.1 [0.5; 2.7] |
| Echocardiographic parameters |
| LAVi, mL/m2 | 26.9 [24; 29.3] |
| LVEDVi, mL/m2 | 43.7 [39.5; 49.6] |
| LV EF, % | 59 [56; 60.3] |
| LV GLS, % | -20 [-18.7; -21.6] |
| Е/е' | 6.7 [6; 7.7] |
| Vascular wall parameters |
| ABI | 1.1 [1.02; 1.16] |
| Brachiocephalic atherosclerosis, n (%)\* | 27 (61.4) |
| Bioimpedancemetry parameters (n = 83) |
| Fat mass, kg | 25.1 [18.1; 30.8] |
| Fat mass category, n (%): |  |
| Normal | 13 (15.7) |
| Decreased | 3 (3.6) |
| Increased | 67 (80.7) |
| Lean mass, kg | 19.4 [17.6; 21.4] |
| Lean mass category, n (%): |  |
| Normal | 53 (63.9) |
| Decreased | 21 (25.3) |
| Increased | 9 (10.8) |
| Proportion of the lean mass, % | 43.5 [42.1; 44.9] |
| Proportion of the lean mass category, n (%): |  |
| Normal | 69 (83.1) |
| Decreased | 9 (10.8) |
| Increased | 5 (6.0) |
| Basal metabolic rate, Kcal/daily | 1350 [1276; 1436] |
| Medical treatment for CVD and diabetes mellitus |
| Beta-adrenoblockers, n (%) | 25 (27.8) |
| ACEI/ARB, n (%) | 18 (20) |
| ARNI, n (%) | 4 (4.4) |
| Diuretics, n (%) | 3 (3.3) |
| Mineralocorticoid receptor agonists, n (%) | 3 (3.3) |
| Calcium antagonists, n (%) | 2 (2.2) |
| Statins, n (%) | 10 (11.1) |
| Anti-diabetic agents, n (%) | 5 (5.6) |
| Antiplatelet agents, n (%) | 6 (6.7) |
| Anticoagulants, n (%) | 7 (7.8) |

ABI, ankle brachial index; ACEI, angiotensin-converting enzyme inhibitors; ARB, angiotensin II receptor blockers; ARNI, angiotensin receptor/neprilysin inhibitors; CVD, cardiovascular diseases; Е/е' , the ratio between early mitral inflow velocity and mitral annular early diastolic velocity; HDL, high density lipoproteins; hsCRP, highly sensitive C-reactive protein; LAVi, indexed left atrial volume; LDL, low density lipoproteins; bpm, beats per minute; LV GLS, left ventricular global longitudinal strain; LVEDVi, indexed left ventricular end diastolic volume; LV EF, left ventricular ejection fraction

The values are given as patient numbers (n) and their proportions in the study sample (%); continuous variables are given as median (Me), lower and upper quartiles [25%; 75%]

\* Doppler ultrasonography of the brachycephalic arteries was performed in 44 patients

**Table 3. Results of the exercise tolerance tests**

|  |  |
| --- | --- |
| **Parameter** | **Value** |
| ECG exercise tolerance test (n = 90) |
| МЕТs | 5.9 [5.0; 6.9] |
| Maximal exercise power, Vt | 100 [75; 100] |
| HRpeak, bpm | 148 [134; 156] |
| Borg RPE, scores | 15 [14; 17] |
| Exercise tolerance, n (%): |  |
| Low | 9 (10.7) |
| Moderate | 57 (67.9) |
| High | 18 (21.4) |
| Test done up to submaximal HR, n (%) | 59 (70.2) |
| Cardiorespiratory endurance test (n = 53) |
| VO2peak, mL/min/kg | 16.2 [13.1; 18.2] |
| %VO2peak, % | 71.0 [61.0; 81.3] |
| RERpeak | 1.12 [1.07; 1.19] |
| O2 pulse peak, mL/beat | 7.6 [6.6; 8.8] |
| %О2 pulse peak, % | 84.0 [70.8; 95.3] |

ECG, electrocardiography; HR, heart rate; bpm, beats per minute; МЕТ, maximal exercise capacity (metabolic equivalents); O2 pulse peak, peak oxygen pulse; RERpeak, respiratory exchange rate; RPE, rating of perceived exertion on the Borg scale; VO2peak, peak oxygen consumption

The values are given as patient numbers (n) and their proportions in the study sample (%); continuous variables are given as median (Me), lower and upper quartiles [25%; 75%]

**Table 4. Psychosocial risk factor for cardiovascular diseases and sleep quality (n = 90)**

|  |  |
| --- | --- |
| **Parameters** | **Value, n (%)** |
| Anxiety symptoms: | 45 (50) |
| Clinically significant | 18 (20) |
| Subclinical | 27 (30) |
| Depressive symptoms: | 16 (17.8) |
| Clinically significant | 11 (12.2) |
| Subclinical | 5 (5.6) |
| High stress level | 51 (56.7) |
| Decreased sleep quality | 80 (88.9) |

The values are given as absolute patient numbers (n) and their proportion in the sample (%)

**Table 5. Frequencies of undiagnosed risk factors depending on the cardiovascular risk category in the patients who had received anti-tumor treatment (in accordance with the European Society of Cardiology guidelines on cardio-oncology, 2022)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Low / moderate CVR****(n = 34)** | **High / very high CVR****(n = 56)** | **p value** |
| Age, years | 48.4 [43.0; 53.0] | 51.5 [47.0; 51.5] | 0.005 |
| Psychosocial risk factors and sleep quality |
| Anxiety symptoms, n (%): |  |  | 0.671 |
| Subclinical | 8 (23.5) | 19 (33.9) |  |
| Clinically significant | 10 (29.4) | 8 (14.3) |  |
| Depressive symptoms, n (%): |  |  | 1 |
| Subclinical | 4 (11.8) | 7 (12.5) |  |
| Clinically significant | 2 (5.9) | 3 (5.4) |  |
| High stress level, n (%) | 26 (76.5) | 25 (44.6) | 0.004 |
| Decreased sleep quality, n (%) | 31 (91.2) | 49 (87.5) | 0.737 |
| Cardiorespiratory endurance | n = 20 | n = 33 |  |
| VO2peak, mL/min/kg | 17.5 [15.7; 19.3] | 15.7 [11.9; 18.0] | 0.046 |
| CRE below the functional independence threshold, n (%) | 12 (60) | 25 (73.5) | 0.354 |

CRE, cardiorespiratory endurance; CVR, cardiovascular risk; VO2peak, peak oxygen consumption

The values are given as patient numbers (n) and their proportions in the study sample (%)