Suuplementary Table1. Clinical characteristics, nutritional status, and nutrient intake in the STG group in postoperative 3 months

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Factor | Subgroup | Non-chemotherapy | Postoperative chemotherapy  without progression | Postoperative chemotherapy with progression disease status | p |
| (n=292) | (n=75) | (n=1) | No chemotherapy vs. Postoperative chemotherapy without progression |
| median (IQR) | median (IQR) | median (IQR) |  |
| N (%) | N (%) | N (%) |  |
| Age |  | 56.0 (49.0, 64.8) | 57.0 (47.0, 66.0) | 52 | 0.995 |
| Sex | M | 192 (65.8) | 52 (69.3) | 1 | 0.586 |
|  | F | 100 (34.2) | 23 (30.7) | 0 |  |
| Pre-BMI (kg/m2) |  | 23.4 (21.4, 25.2) | 22.1 (20.4, 25.8) | 19.3 | 0.874 |
| Charlson/Deyo Comorbidity Score | 0 | 245 (83.9) | 65 (86.7) | 1 | 0.73 |
|  | 1 | 42 (14.4) | 10 (13.3) | 0 |  |
|  | 2 | 5 (1.7) | 0 (0) | 0 |  |
| Smoking | Never | 114 (39.0) | 26 (34.7) | 0 | 0.806 |
|  | Former | 142 (48.6) | 40 (53.3) | 1 |  |
|  | Current | 31 (10.6) | 7 (9.3) | 0 |  |
|  | Unknown | 5 (1.7) | 2 (2.7) | 0 |  |
| Alcohol | Never | 82 (28.1) | 19 (25.3) | 0 | 0.933 |
|  | Former | 136 (46.6) | 35 (46.7) | 1 |  |
|  | Current | 70 (24.0) | 20 (26.7) | 0 |  |
|  | Unknown | 4 (1.4) | 1 (1.3) | 0 |  |
| Surgical approach | Open | 49 (16.9) | 54 (72.0) | 1 | <0.001 |
|  | Laparoscopy | 228 (78.6) | 19 (25.3) | 0 |  |
|  | Robot | 13 (4.5) | 2 (2.7) | 0 |  |
| Stage\* | 1 | 278 (95.2) | 11 (14.7) | 0 | <0.001 |
|  | 2 | 10 (3.4) | 37 (49.3) | 0 |  |
|  | 3 | 4 (1.4) | 25 (33.3) | 0 |  |
|  | 4 | 0 (1.4) | 2 (2.7) | 1 |  |
| Chemotherapy regimens | Fluoropyrimidine monotherapy |  | 42 (56.0) | 0 |  |
|  | Fluoropyrimidine and platinum combination therapy |  | 17 (22.7) | 1 |  |
|  | Others |  | 3 (4.0) | 0 |  |
|  | Unknown |  | 13 (17.3) | 0 |  |
| Toxicities inducing discontinuation of chemotherapy | Absent |  | 66 (88.0) | 1 |  |
|  | Present |  | 0 (0) | 0 |  |
|  | Unknown |  | 9 (12.0) | 0 |  |
| BW ratio (current/baseline)‡ | | 0.94 (0.89, 0.97) | 0.94 (0.87, 1.00) | 1 | 0.965 |
| Change of Hb (g/dL)‡ | | -0.9 (-1.6, -0.4) | -1.6 (-3.6, 0.7) | No data | 0.232 |
| Change of protein (g/dL)‡ | | -0.4 (-0.6, -0.1) | -0.4 (-0.7, 0.1) | No data | 0.733 |
| Change of albumin (g/dL)‡ | | -0.2 (-0.4, -0.1) | -0.3 (-0.5, -0.1) | No data | 0.841 |
| Food amount (g) | | 1495.0 (1137.6, 1789.7) | 1221.3 (1138.5, 1611.2) | 1761.7 | 0.297 |
| Total Kcal | 2200§ | 1851.8 (1457.6, 2092.8) | 1745.2 (1514.8, 2012.8) | 1913 | 0.342 |
| Carbohydrate (g) | | 271.6 (229.6, 324.4) | 259.5 (217.7, 310.8) | 274.3 | 0.459 |
| Fat (g) |  | 49.5 (36.5, 67.5) | 51.1 (36.3, 60.0) | 55.9 | 0.117 |
| Protein (g) | 60§ | 78.8 (57.6, 103.8) | 75.7 (63.7, 105.2) | 90.6 | 0.278 |
| Fiber (g) | 25§ | 27.4 (21.6, 34.3) | 25.1 (20.7, 27.9) | 31.2 | 0.143 |
| Folate (㎍) | 400§ | 637.2 (472.2, 786.1) | 592.8 (477.3, 742.0) | 725.7 | 0.132 |
| Vitamin B12 (㎍) | 2.4§ | 10.3 (5.9, 16.0) | 102 (6.4, 15.9) | 14.2 | 0.529 |
| Vitamin D (㎍) | 10§ | 4.5 (2.0, 9.1) | 4.0 (2.1, 9.6) | 12.7 | 0.322 |
| Calcium (mg) | 750§ | 643.5 (431.1, 801.1) | 573.8 (411.3, 628.7) | 1427.9 | 0.887 |
| Iron (overall) (mg) | 10§ | 17.8 (13.8, 21.9) | 17.5 (14.9, 20.2) | 31.5 | 0.032 |

pre-BMI, preoperative body mass index; NA, not applicable; BW, body weight; Hb, hemoglobin

\*7th AJCC tumor-node-metastasis (TNM) classification

‡ Changes of body weight, hemoglobin, protein, and albumin levels between postoperative 3 months and preoperative period.

§ Dietary Reference Intakes For Koreans 2015

Suuplementary Table2. Clinical characteristics, nutritional status, and nutrient intake in the TG group in postoperative 3 months

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Factor | Subgroup | | Non-chemotherapy | Postoperative chemotherapy  without progression | p |
| (n=59) | (n=54) |  |
| median (IQR) | median (IQR) |  |
| N (%) | N (%) |  |
| Age |  | | 58.0 (49.5, 60.5) | 67.0 (42.0, 68.5) | 0.408 |
| Sex | M | | 39 (66.1) | 41 (75.9) | 0.303 |
|  | F | | 20 (33.9) | 13 (24.1) |  |
| Pre-BMI (kg/m2) |  | | 22.1 (20.9, 27.2) | 22.0 (19.9, 24.9) | 0.066 |
| Charlson/Deyo Comorbidity Score | 0 | | 54 (91.5) | 47 (87.0) | 0.756 |
|  | 1 | | 4 (6.8) | 6 (11.1) |  |
|  | 2 | | 1 (1.7) | 1 (1.9) |  |
| Smoking | Never | | 22 (37.3) | 14 (25.9) | 0.382 |
|  | Former | | 27 (45.8) | 28 (51.9) |  |
|  | Current | | 9 (15.3) | 12 (22.2) |  |
|  | Unknown | | 1 (1.7) | 0 (0) |  |
| Alcohol | Never | | 11 (18.6) | 16 (29.6) | 0.422 |
|  | Former | | 26 (44.1) | 20 (37.0) |  |
|  | Current | | 21 (35.6) | 18 (33.3) |  |
|  | Unknown | | 1 (1.7) | 0 (0) |  |
| Surgical approach | Open | | 32 (54.2) | 46 (85.2) | 0.001 |
|  | Laparoscopy | | 23 (39.0) | 8 (14.8) |  |
|  | Robot | | 4 (6.8) | 0 (0) |  |
| Stage\* | 1 | | 48 (81.4) | 3 (5.6) | <0.001 |
|  | 2 | | 4 (6.8) | 22 (40.7) |  |
|  | 3 | | 6 (10.2) | 27 (50.0) |  |
|  | 4 | | 1 (1.7) | 2 (3.7) |  |
| Chemotherapy regimens | Fluoropyrimidine monotherapy | |  | 34 (63.0) |  |
|  | Fluoropyrimidine and platinum combination therapy | |  | 14 (25.9) |  |
|  | Others | |  | 1 (1.9) |  |
|  | Unknown | |  | 5 (9.3) |  |
| Toxicities inducing discontinuation of chemotherapy | Absent | |  | 47 (87.0) |  |
|  | Present | |  | †3 (5.6) |  |
|  | Unknown | |  | 4 (7.4) |  |
| BW ratio (current/baseline)‡ | | | 0.93 (0.89, 0.97) | 0.90 (0.82, 0.93) | 0.299 |
| Change of Hb (g/dL)‡ | | | -1.1 (-2.5, -0.7) | -1.6 (-3.5, -0.3) | 0.73 |
| Change of protein (g/dL)‡ | | | -0.4 (-0.7, -0.1) | -0.3 (-1.1, 0.1) | 0.805 |
| Change of albumin (g/dL)‡ | | | -0.2 (-0.4, -0.1) | -0.3 (-0.5, 0.3) | 0.882 |
| Food amount (g) | | | 1512.6 (1160.1, 2202.0) | 1219.6 (955.1, 1500.2) | 0.144 |
| Total Kcal | | 2200§ | 1732.3 (1538.4, 2243.4) | 1381.9 (1183.6, 1725.0) | 0.012 |
| Carbohydrate (g) | | | 47.8 (31.7, 59.9) | 31.6 (23.5, 44.9) | 0.236 |
| Fat (g) | |  | 47.8 (31.7, 59.9) | 31.6 (23.5, 44.9) | 0.004 |
| Protein (g) | | 60§ | 91.1 (77.6, 96.5) | 68.6 (47.7, 77.4) | 0.002 |
| Fiber (g) | | 25§ | 28.3 (17.7, 35.5) | 24.3 (15.4, 27.4) | 0.098 |
| Folate (㎍) | | 400§ | 616.8 (416.8, 867.1) | 488.1 (338.7, 572.6) | 0.025 |
| Vitamin B12 (㎍) | | 2.4§ | 12.6 (8.9, 14.2) | 6.7 (4.7, 11.5) | 0.029 |
| Vitamin D (㎍) | | 10§ | 5.9 (2.9, 10.0) | 1.7 (0.6, 2.1) | 0.027 |
| Calcium (mg) | | 750§ | 699.2 (560.5, 864.4) | 539.5 (353.8, 631.6) | 0.001 |
| Iron (overall) (mg) | | 10§ | 19.3 (14.2, 24.1) | 12.8 (10.6, 17.7) | 0.025 |

pre-BMI, preoperative body mass index; NA, not applicable; BW, body weight; Hb, hemoglobin

\*7th AJCC tumor-node-metastasis (TNM) classification

† Skin rash (2), hepatitis (1). All patients who experienced toxicity had taken S-1.

‡ Changes of body weight, hemoglobin, protein, and albumin levels between postoperative 3 months and preoperative period.

§ Dietary Reference Intakes For Koreans 2015

Suuplementary Table3. Clinical characteristics, nutritional status, and nutrient intake in the STG group in postoperative 12 months

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Factor | Subgroup | | Non-chemotherapy | Postoperative chemotherapy  without progression | p |
| (n=442) | (n=70) |  |
| median (IQR) | median (IQR) |  |
| N (%) | N (%) |  |
| Age |  | | 57.0 (48.5, 64.0) | 53.0 (44.8, 62.3) | 0.028 |
| Sex | M | | 282 (63.8) | 49 (70.0) | 0.348 |
|  | F | | 160 (36.2) | 21 (30.0) |  |
| Pre-BMI (kg/m2) |  | | 24.0 (22.1, 25.6) | 23.8 (21.1, 25.3) | 0.738 |
| Charlson/Deyo Comorbidity Score | 0 | | 363 (82.1) | 57 (81.4) | 0.301 |
|  | 1 | | 72 (16.3) | 10 (14.3) |  |
|  | 2 | | 7 (1.6) | 3 (4.3) |  |
| Smoking | Never | | 202 (45.7) | 23 (32.9) | 0.052 |
|  | Former | | 202 (45.7) | 36 (51.4) |  |
|  | Current | | 33 (7.5) | 8 (11.4) |  |
|  | Unknown | | 5 (1.1) | 3 (4.3) |  |
| Alcohol | Never | | 139 (31.4) | 17 (24.3) | 0.026 |
|  | Former | | 216 (48.9) | 30 (42.9) |  |
|  | Current | | 83 (18.8) | 20 (28.6) |  |
|  | Unknown | | 4 (0.9) | 3 (4.3) |  |
| Surgical approach | Open | | 60 (13.6) | 44 (62.9) | <0.001 |
|  | Laparoscopy | | 365 (82.6) | 25 (35.7) |  |
|  | Robot | | 17 (3.8) | 1 (1.4) |  |
| Stage\* | 1 | | 418 (94.8) | 9 (12.9) | <0.001 |
|  | 2 | | 16 (3.6) | 38 (54.3) |  |
|  | 3 | | 7 (1.6) | 23 (32.9) |  |
|  | 4 | | 0 (0) | 0 (0) |  |
| Chemotherapy regimens | Fluoropyrimidine monotherapy | |  | 43 (61.4) |  |
|  | Fluoropyrimidine and platinum combination therapy | |  | 14 (20.0) |  |
|  | Others | |  | 3 (4.3) |  |
|  | Unknown | |  | 10 (14.3) |  |
| Toxicities inducing discontinuation of chemotherapy | Absent | |  | 61 (87.1) |  |
|  | Present | |  | 1 (1.4) |  |
|  | Unknown | |  | 8 (11.4) |  |
| BW ratio (current/baseline)‡ | | | 0.92 (0.87, 0.96) | 0.92 (0.87, 0.96) | 0.715 |
| Change of Hb (g/dL)‡ | | | -0.5 (-1.3, 0) | -1.1 (-2.1, 0.1) | 0.025 |
| Change of protein (g/dL)‡ | | | 0 (-0.3, 0.4) | 0 (-0.3, 0.4) | 0.568 |
| Change of albumin (g/dL)‡ | | | 0 (-0.3, 0.2) | 0 (-0.3, 0.2) | 0.635 |
| Food amount (g) | | | 1307.9 (1076.5, 1541.9) | 1349.1 (1078.2, 1622.5) | 0.156 |
| Total Kcal | | 2200§ | 1703.2 (1432.4, 1952.8) | 1750.9 (1534.4, 1987.8) | 0.129 |
| Carbohydrate (g) | | | 271.4 (228.4, 320.8) | 276.5 (235.6, 318.7) | 0.339 |
| Fat (g) | |  | 38.3 (28.2, 48.1) | 45.9 (34.4, 58.3) | 0.051 |
| Protein (g) | | 60§ | 72.0 (58.9, 86.0) | 70.9 (62.1, 92.8) | 0.31 |
| Fiber (g) | | 25§ | 25.3 (21.0, 31.5) | 25.7 (20.4, 33.5) | 0.171 |
| Folate (㎍) | | 400§ | 568.0 (459.5, 696.4) | 550.7 (461.8, 685.3) | 0.829 |
| Vitamin B12 (㎍) | | 2.4§ | 9.4 (6.0, 14.7) | 9.2 (5.0, 14.4) | 0.695 |
| Vitamin D (㎍) | | 10§ | 4.5 (1.9, 8.0) | 3.5 (1.3, 10.2) | 0.868 |
| Calcium (mg) | | 750§ | 554.2 (438.1, 714.6) | 547.8 (446.6, 730.5) | 0.709 |
| Iron (overall) (mg) | | 10§ | 15.6 (12.7, 19.2) | 16.6 (13.5, 21.1) | 0.093 |

pre-BMI, preoperative body mass index; NA, not applicable; BW, body weight; Hb, hemoglobin

\*7th AJCC tumor-node-metastasis (TNM) classification

‡ Changes of body weight, hemoglobin, protein, and albumin levels between postoperative 3 months and preoperative period.

§ Dietary Reference Intakes For Koreans 2015

Suuplementary Table4. Clinical characteristics, nutritional status, and nutrient intake in the TG group in postoperative 12 months

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Factor | Subgroup | | Non-- chemotherapy | Postoperative chemotherapy  without progression | Postoperative chemotherapy with progression disease status | p |
| (n=68) | (n=39) | (n=3) |  |
| median (IQR) | median (IQR) | median (IQR) | No chemotherapy vs. Postoperative chemotherapy without progression |
| N (%) | N (%) | N (%) |  |
| Age |  | | 59.0 (51.5, 64.5) | 54.0 (44.0, 67.0) | 49.0 (48.0, NA) | 0.469 |
| Sex | M | | 49 (72.1) | 29 (74.4) | 2 (66.7) | 0.826 |
|  | F | | 19 (27.9) | 10 (25.6) | 1 (33.3) |  |
| Pre-BMI (kg/m2) |  | | 23.8 (22.3, 25.9) | 23.3 (21.1, 25.1) | 20.4 (20.2, NA) | 0.251 |
| Charlson/Deyo Comorbidity Score | 0 | | 58 (85.3) | 33 (84.6) | 3 (100) | 0.86 |
|  | 1 | | 9 (13.2) | 6 (15.4) | 0 (0) |  |
|  | 2 | | 1 (1.5) | 0 (0) | 0 (0) |  |
| Smoking | Never | | 25 (36.8) | 14 (35.9) | 1 (33.3) | 0.953 |
|  | Former | | 32 (47.1) | 18 (46.2) | 1 (33.3) |  |
|  | Current | | 10 (14.7) | 7 (17.9) | 1 (33.3) |  |
|  | Unknown | | 1 (1.5) | 0 (0) | 0 (0) |  |
| Alcohol | Never | | 16 (23.5) | 9 (23.1) | 1 (33.3) | 0.979 |
|  | Former | | 29 (42.6) | 16 (41.1) | 1 (33.3) |  |
|  | Current | | 22 (32.4) | 14 (35.9) | 1 (33.3) |  |
|  | Unknown | | 1 (1.5) | 0 (0) | 0 (0) |  |
| Surgical approach | Open | | 33 (48.5) | 34 (87.2) | 2 (66.7) | <0.001 |
|  | Laparoscopy | | 34 (50.0) | 5 (12.8) | 1 (33.3) |  |
|  | Robot | | 1 (1.5) | 0 (0) | 0 (0) |  |
| Stage\* | 1 | | 55 (82.1) | 3 (7.7) | 0 (0) | <0.001 |
|  | 2 | | 9 (13.4) | 16 (41.0) | 0 (0) |  |
|  | 3 | | 3 (4.5) | 19 (48.7) | 2 (66.7) |  |
|  | 4 | | 0 (0) | 1 (2.6) | 1 (33.3) |  |
| Chemotherapy regimens | Fluoropyrimidine monotherapy | |  | 22 (56.4) | 0 (0) |  |
|  | Fluoropyrimidine and platinum combination therapy | |  | 10 (25.6) | †3 (100) |  |
|  | Others | |  | 2 (5.1) | 0 (0) |  |
|  | Unknown | |  | 5 (12.8) | 0 (0) |  |
| Toxicities inducing discontinuation of chemotherapy | Absent | |  | 32 (82.1) | 2 (66.6) |  |
|  | Present | |  | 2 (5.1) | 1 (33.3) |  |
|  | Unknown | |  | 5 (12.8) | 0 (0) |  |
| BW ratio (current/baseline)‡ | | | 0.87 (0.84, 0.91) | 0.9 (0.84, 0.95) | 0.92 (0.89, NA) | 0.117 |
| Change of Hb (g/dL)‡ | | | (-)1.1 (-1.7, -0.2) | (-)1.1 (-2.4, -0.4) | (-)3.4 (-3.6, NA) | 0.209 |
| Change of protein (g/dL)‡ | | | (-)0.2 (-0.4, 0.1) | (-)0.1 (-0.6, 0.1) | (-)0.5 (-0.8, NA) | 0.19 |
| Change of albumin (g/dL)‡ | | | 0 (-0.3, 0.1) | (-)0.2 (-0.4, 0.1) | (-)0.3 (-0.5, NA) | 0.131 |
| Food amount (g) | | | 1379.6 (1083.3, 1585.0) | 1466.4 (1128.6, 1911.2) | 1588.2 (1431.1, NA) | 0.542 |
| Total Kcal | | 2200§ | 1708.8 (1403.7, 2032.3) | 1914.4 (1578.4, 2065.4) | 1715.0 (1558.7, NA) | 0.64 |
| Carbohydrate (g) | | | 269.6 (218.5, 316.2) | 299.7 (243.5, 342.7) | 262.9 (246.8, NA) | 0.682 |
| Fat (g) | |  | 37.5 (32.6, 48.1) | 45.1 (29.0, 54.1) | 43.0 (35.8, NA) | 0.627 |
| Protein (g) | | 60§ | 71.9 (56.1, 84.2) | 77.6 (61.2, 90.4) | 82.3 (80.0, NA) | 0.375 |
| Fiber (g) | | 25§ | 26.4 (19.7, 30.0) | 28.4 (24.7, 33.9) | 28.5 (20.5, NA) | 0.338 |
| Folate (㎍) | | 400§ | 580.0 (442.6, 714.2) | 614.7 (467.6, 787.6) | 700.8 (449.4, NA) | 0.492 |
| Vitamin B12 (㎍) | | 2.4§ | 9.9 (6.4, 16.5) | 10.4 (5.8, 16.4) | 9.9 (3.6, NA) | 0.941 |
| Vitamin D (㎍) | | 10§ | 4.4 (1.8, 9.0) | 4.7 (2.0, 13.1) | 11.6 (7.8, NA) | 0.756 |
| Calcium (mg) | | 750§ | 589.5 (437.7, 734.3) | 588.2 (426.4, 705.6) | 742.4 (474.4, NA) | 0.794 |
| Iron (overall) (mg) | | 10§ | 15.1 (16.2, 18.6) | 19.0 (14.8, 21.3) | 22.2 (15.0, NA) | 0.309 |

\*7th AJCC tumor-node-metastasis (TNM) classification

† Skin rash (1), hepatitis (1), and asthma (1). Two patients had taken S-1 and one patient who experience asthma had taken TS-1 and cisplatin.

‡ Changes of body weight, hemoglobin, protein, and albumin levels between postoperative 3 months and preoperative period.

§ Dietary Reference Intakes For Koreans 2015