**Food Intake assessment**

We recorded, by using a diet diary, the food intake for a complete week, including working days and weekends by using the software WinFood, Medimatica s.r.l.

Based on the quantities and qualities of food consumed, the program elaborated the daily energy intake in terms of Kcal per day referring to the caloric amount as specifically related to carbohydrates, fats, and proteins dietary proportions.

**Physical exercise assessment**

Medical validated questionnaire and relative items assessing physical exercise practising in enrolled patients.

| **Questions/Items** | **Answer** | |
|---|---|---|
| Are you doing or have you ever done (in the last 2 years) sport in a continuative and regular way? | YES | NO |
| Have you changed your daily physical activity in the last 6 months? | NO | YES |
| If yes, has it enhanced or worsened? | Enhanced | Worsened |
| How many hours per week do you usually spend for physical exercise? | More than 150 minutes/week | Less than 150 minutes/week |

Each patient was considered on **active** physical exercise if he/she has done sports in the last 2 years, this practice has not worsened in the last 6 months by spending at least 150 minutes per week in physical activity.

STROBE Statement—checklist of items that should be included in reports of observational studies

| | Item No. | Recommendation | Page No. | Comments |
|---|---|---|---|---|
| **Title and abstract** | 1 | (*a*) Indicate the study's design with a commonly used term in the title or the abstract | 1 | |
| | | (*b*) Provide in the abstract an informative and balanced summary of what was done and what was found | 2-3 | |
| **Introduction** | | | | |
| Background/rationale | 2 | Explain the scientific background and rationale for the investigation being reported | 4 | |
| Objectives | 3 | State specific objectives, including any prespecified hypotheses | 4-5 | |
| **Methods** | | | | |
| Study design | 4 | Present key elements of study design early in the paper | 5-6 | |
| Setting | 5 | Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection | 5-6 | |
| Participants | 6 | (*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up<br>*Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls<br>*Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants | 6-7 | |
| | | (*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed<br>*Case-control study*—For matched studies, give matching criteria and the number of controls per case | | |
| Variables | 7 | Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable | 7-8 | |
| Data sources/ measurement | 8* | For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group | 7-8 | |
| Bias | 9 | Describe any efforts to address potential sources of bias | 7-8 | |
| Study size | 10 | Explain how the study size was arrived at | 8-9 | |

Continued on next page

| | | | |
|---|---|---|---|
| Quantitative variables | 11 | Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why | 9 |
| Statistical methods | 12 | (*a*) Describe all statistical methods, including those used to control for confounding | 9 |
| | | (*b*) Describe any methods used to examine subgroups and interactions | 9 |
| | | (*c*) Explain how missing data were addressed | 9 |
| | | (*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed<br>*Case-control study*—If applicable, explain how matching of cases and controls was addressed<br>*Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy | 9 |
| | | (*e*) Describe any sensitivity analyses | |
| **Results** | | | |
| Participants | 13* | (a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed | 9-10 |
| | | (b) Give reasons for non-participation at each stage | 9-10 |
| | | (c) Consider use of a flow diagram | N/A |
| Descriptive data | 14* | (a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders | 9-10 (+ Table 1) |
| | | (b) Indicate number of participants with missing data for each variable of interest | 9-10 |
| | | (c) *Cohort study*—Summarise follow-up time (eg, average and total amount) | 9-10 |
| Outcome data | 15* | *Cohort study*—Report numbers of outcome events or summary measures over time | 11-12-13 |
| | | *Case-control study*—Report numbers in each exposure category, or summary measures of exposure | |
| | | *Cross-sectional study*—Report numbers of outcome events or summary measures | |
| Main results | 16 | (*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included | 9-10-11-12 |
| | | (*b*) Report category boundaries when continuous variables were categorized | 9-10-11 |
| | | (*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period | 9-10-11 |

Continued on next page

| | | | |
|---|---|---|---|
| Other analyses | 17 | Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses | N/A |
| **Discussion** | | | |
| Key results | 18 | Summarise key results with reference to study objectives | 13-14-15-16 |
| Limitations | 19 | Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias | 17 |
| Interpretation | 20 | Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence | 13-14-15-16-17 |
| Generalisability | 21 | Discuss the generalisability (external validity) of the study results | 15-16-17 |
| **Other information** | | | |
| Funding | 22 | Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based | N/A |

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

**Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

**Supplementary Table 1.** Assessment of physical activity, nutritional and dietary habits among the three-time points evaluations

| **Variables** (mean ± SD) | **Baseline (T0: January 2018)** | **Intermediate (T1: January 2020)** | **End of the study (T2: January 2022)** | **Comparison between the three-time points evaluations** | | |
|---|---|---|---|---|---|---|
| | | | | **Time-points** | **95% CI** | **p-value** |
| Physical activity (hours/week) | 6.1 ± 1.3 | 6.1 ± 1.2 | 4.3 ± 1.4 | T0 vs T1 | -0.2026 to 0.2206 | 0.993 |
| | | | | T0 vs T2 | 1.529 to 2.201 | **<0.0001** |
| | | | | T1 vs T2 | 1.521 to 2.189 | **<0.0001** |
| Daily intake (Kilocalories / day) | 2296 ± 397.1 | 2292 ± 401.9 | 3024 ± 545.4 | T0 vs T1 | -59.20 to 67.49 | 0.986 |
| | | | | T0 vs T2 | -847.3 to -607.6 | **<0.0001** |
| | | | | T1 vs T2 | - 845.4 to -617.8 | **<0.0001** |
| Carbohydrates (Kilocalories) | 1069 ± 227 | 1069 ± 235 | 1716 ± 414.1 | T0 vs T1 | -36.49 to 36.64 | > 0.99 |
| | | | | T0 vs T2 | -727.5 to -566.1 | **<0.0001** |
| | | | | T1 vs T2 | -727.5 to -566.2 | **<0.0001** |
| Lipids (Kilocalories) | 566.6 ± 126.9 | 574.4 ± 126.7 | 1055 ± 261.4 | T0 vs T1 | -28.72 to 13.17 | 0.655 |
| | | | | T0 vs T2 | -538.5 to -438.1 | **<0.0001** |
| | | | | T1 vs T2 | -528.9 to -432.2 | **<0.0001** |
| Proteins (Kilocalories) | 661 ± 185.1 | 649.2 ± 198.9 | 234.3 ± 166.9 | T0 vs T1 | -18.18 to 41.86 | 0.62 |
| | | | | T0 vs T2 | 387 to 466.5 | **<0.0001** |
| | | | | T1 vs T2 | 375.4 to 454.5 | **<0.0001** |

*SD: standard deviation. The Kruskal-Wallis test or ANOVA test with post-hoc Tukey analysis, in the case of non-normal or normal distribution respectively, were performed to compare the continuous variables among three times of observation. Statistically significant differences ($p<0.05$) among the three periods are reported in bold.*

**Supplementary Table 2.** Assessment of body composition parameters among the three-time points evaluations

| **Variables** (mean ± SD) | **Baseline (T0: January 2018)** | **Intermediate (T1: January 2020)** | **End of the study (T2: January 2022)** | **Comparison between the three-time points evaluations** | | |
|---|---|---|---|---|---|---|
| | | | | **Time-points** | **95% CI** | **p-value** |
| FFM (Kg) | 63.4 ± 7.9 | 63.3 ± 8.2 | 63.7 ± 11.1 | T0 vs T1 | -0.388 to 0.624 | 0.847 |
| | | | | T0 vs T2 | -1.973 to 1.263 | 0.862 |
| | | | | T1 vs T2 | -2.082 to 1.138 | 0.767 |
| FFM (%) | 79.7 ± 4 | 79.7 ± 3.9 | 74 ± 6.3 | T0 vs T1 | -0.348 to 0.313 | 0.991 |
| | | | | T0 vs T2 | 4.628 to 6.586 | **<0.0001** |
| | | | | T1 vs T2 | 4.677 to 6.572 | **<0.0001** |
| SMMI ($Kg/m^2$) | 10.4 ± 1.1 | 10.3 ± 1.1 | 10.4 ± 1.6 | T0 vs T1 | -0.067 to 0.079 | 0.979 |
| | | | | T0 vs T2 | -0.286 to 0.188 | 0.877 |
| | | | | T1 vs T2 | -0.291 to 0.181 | 0.846 |
| FM (Kg) | 16.2 ± 3.9 | 16.2 ± 3.9 | 22.5 ± 7.6 | T0 vs T1 | -0.286 to 0.358 | 0.962 |
| | | | | T0 vs T2 | -7.534 to -5.106 | **<0.0001** |
| | | | | T1 vs T2 | -7.506 to -5.205 | **<0.0001** |
| FM (%) | 20.3 ± 4.01 | 20.3 ± 3.9 | 26 ± 6.3 | T0 vs T1 | -0.314 to 0.346 | 0.992 |
| | | | | T0 vs T2 | -6.593 to -4.635 | **<0.0001** |
| | | | | T1 vs T2 | -6.557 to -4.683 | **<0.0001** |
| ECM (Kg) | 31.3 ± 5.8 | 31.3 ± 5.8 | 31.1 ± 7.2 | T0 vs T1 | -0.306 to 0.461 | 0.882 |
| | | | | T0 vs T2 | -2.816 to -0.721 | **0.0003** |
| | | | | T1 vs T2 | -2.875 to - 0.817 | **0.0001** |
| ECM (%) | 39.26 ± 4.8 | 39.3 ± 4.7 | 35.9 ± 6.2 | T0 vs T1 | -0.347 to 0.379 | 0.994 |
| | | | | T0 vs T2 | -3.148 to -1.881 | **<0.0001** |
| | | | | T1 vs T2 | -3.035 to -2.026 | **<0.0001** |
| BCM (Kg) | 25.5 ± 3.4 | 25.5 ± 3.6 | 24.1 ± 4.9 | T0 vs T1 | -0.253 to 0.333 | 0.944 |
| | | | | T0 vs T2 | 0.644 to 2.184 | **<0.0001** |
| | | | | T1 vs T2 | 0.661 to 2.088 | **<0.0001** |
| BCM (%) | 40.4 ± 3.5 | 40.3 ± 3.5 | 37.8 ± 4 | T0 vs T1 | -0.379 to 0.347 | 0.994 |
| | | | | T0 vs T2 | 1.881 to 3.148 | **<0.0001** |
| | | | | T1 vs T2 | 2.026 to 3.035 | **<0.0001** |
| TBW (%) | 46.3 ± 5.9 | 46.1 ± 5.8 | 46.7 ± 7.3 | T0 vs T1 | -0.667 to 1.056 | 0.855 |
| | | | | T0 vs T2 | -1.742 to 0.986 | 0.79 |
| | | | | T1 vs T2 | -1.971 to 0.828 | 0.599 |

*BCM: body cell mass; ECM: extracellular mass; FM: fat mass; FFM: free fat mass; SMM: skeletal muscle mass; SMMI: skeletal muscle mass index; SD: standard deviation; TBW: total body water. Statistically significant differences between the three periods are reported in bold. The Kruskal-Wallis test or ANOVA test with post-hoc Tukey analysis, in the case of non-normal or normal distribution respectively, were performed to compare the continuous variables among three times of observation. Statistically significant differences ($p<0.05$) among the three periods are reported in bold*

**Supplementary Table 3.** Multinomial logistic regression analysis showing the variables significantly associated with HCC overall and HCC staged Milan-out criteria at diagnosis occurrence during the lockdown. The odds ratios (OR) of the study variables on the just mentioned events were calculated considering the confounding variables (age, sex, BMI, T2DM, SARS-CoV-2 infection and LSM).

| **Outcome: HCC overall occurrence during the lockdown** | | | |
|---|---|---|---|
| **Variable** | **Odds ratio** | **Confidence Interval (95%)** | **p-value** |
| FFM (Kg) | 0.809 | 0.72-0.909 | 0.0003 |
| FFM (%) | 0.703 | 0.597-0.828 | <0.0001 |
| SMMI | 0.568 | 0.387-0.834 | 0.004 |
| BCM (Kg) | 0.536 | 0.401-0.718 | <0.0001 |
| BCM (%) | 0.664 | 0.531-0.83 | 0.0003 |
| FM (Kg) | 1.33 | 1.159-1.527 | <0.0001 |
| FM (%) | 1.422 | 1.207-1.675 | <0.0001 |
| LSM (kPa) | 0.851 | 0.752-0.963 | 0.01 |
| **Outcome: HCC staged Milan-out criteria at diagnosis during the lockdown** | | | |
| **Variable** | **Odds ratio** | **Confidence Interval (95%)** | **p-value** |
| FFM (Kg) | 0.812 | 0.694-0.951 | 0.01 |
| FFM (%) | 0.687 | 0.542-0.87 | 0.002 |
| SMMI | 0.596 | 0.362-0.979 | 0.04 |
| BCM (Kg) | 0.583 | 0.408-0.833 | 0.003 |
| BCM (%) | 0.717 | 0.549-0.936 | 0.01 |
| FM (Kg) | 1.363 | 1.121-1.656 | 0.002 |
| FM (%) | 1.456 | 1.15-1.845 | 0.002 |
| LSM (kPa) | 0.822 | 0.688-0.982 | 0.03 |

*BCM: Body cellular mass; FFM: Free fat mass; FM: Fat mass; LSM: Liver stiffness measurement; kPa: Kilopascal; Kg: kilograms; SMM: Skeletal muscle mass; SMMI: Skeletal muscle mass index.*

**Supplementary Table 4.** Multinomial logistic regression analysis of the delta values (January 2020 vs end of the study assessments) of the parameters significantly associated with HCC overall and HCC staged Milan-out criteria at diagnosis occurrence during the lockdown. The odds ratios (OR) of the study variables on the just mentioned events were calculated considering the confounding variables (age, sex, BMI, T2DM, SARS-CoV-2 infection and LSM).

| **Outcome: HCC overall occurrence during the lockdown** | | | |
|---|---|---|---|
| **Variable** | **Odds ratio** | **Confidence Interval (95%)** | **p-value** |
| Δ FFM (%) | 0.576 | 0.442-0.75 | <0.0001 |
| Δ FFM (kg) | 0.782 | 0.693-0.882 | <0.0001 |
| Δ SMMI | 0.570 | 0.351-0.926 | 0.02 |
| Δ BCM (Kg) | 0.457 | 0.326-0.639 | <0.0001 |
| Δ BCM (%) | 0.564 | 0.437-0.729 | <0.0001 |
| Δ FM (Kg) | 1.512 | 1.237-1.848 | <0.0001 |
| Δ FM (%) | 1.737 | 1.334-2.262 | <0.0001 |
| Δ LSM (kPa) | 0.398 | 0.248-0.638 | 0.0001 |
| **Outcome: HCC staged Milan-out criteria at diagnosis during the lockdown** | | | |
| **Variable** | **Odds ratio** | **Confidence Interval (95%)** | **p-value** |
| Δ FFM (%) | 0.614 | 0.458-0.822 | 0.001 |
| Δ FFM (kg) | 0.796 | 0.578-0.862 | 0.001 |
| Δ SMMI | 0.456 | 0.225-0.923 | 0.02 |
| Δ BCM (Kg) | 0.207 | 0.066-0.645 | 0.007 |
| Δ BCM (%) | 0.483 | 0.326-0.713 | 0.0002 |
| Δ FM (Kg) | 1.417 | 1.127-1.781 | 0.003 |
| Δ FM (%) | 1.63 | 1.217-2.183 | 0.001 |
| Δ LSM (kPa) | 0.296 | 0.139-0.63 | 0.002 |

*Δ= variation January 2020 vs end of the study assessments; BCM: Body cellular mass; FFM: Free fat mass; FM: Fat mass; LSM: Liver stiffness measurement; kPa: Kilopascal; Kg: kilograms; SMM: Skeletal muscle mass; SMMI: Skeletal muscle mass index.*