**Supplementary Data – Obstructive sleep apnoea is not an independent determinant of serum testosterone in middle aged and elderly men.**

**Supplementary Table S1:** Linear regression (not standardized) coefficients for the models of log total testosterone with OSA measures (AHI, ODI, TST90 and arousal index) as continuous variables adjusting for log SHBG, age , BMI and study (FAMAS vs NWAHS).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | AHI model |  | ODI model |  | TST90 model |  | Arousal Index model | |
|  | Coef [95%CI] | p-value | Coef [95%CI] | p-value | Coef [95%CI] | p-value | Coef [95%CI] | p-value |
| OSA | 0.0010  [-0.00034, 0.0024] | 0.14 | 0.0011  [-0.0004, 0.0027] | 0.15 | -0.00011  [-0.00056, 0.00034] | 0.63 | 0.0006  [-0.0017, 0.0029] | 0.61 |
| SHBG log (M2) | 0.6 [0.55, 0.65] | <0.0001 | 0.6 [0.55, 0.66] | <0.0001 | 0.6 [0.55, 0.65] | <0.0001 | 0.6 [0.55, 0.65] | <0.0001 |
| BMI (M4) | -0.015 [-0.02, -0.01] | <0.0001 | -0.015 [-0.02, -0.011] | <0.0001 | -0.014 [-0.018, -0.0093] | <0.0001 | -0.014 [-0.018, -0.0097] | <0.0001 |
| Study | -0.2 [-0.24, -0.17] | <0.0001 | -0.2 [-0.24, -0.17] | <0.0001 | -0.2 [-0.24, -0.16] | <0.0001 | -0.2 [-0.24, -0.16] | <0.0001 |
| Age (M4) | -0.0098 [-0.012, -0.008] | <0.0001 | -0.0098 [-0.012, -0.008] | <0.0001 | -0.0095 [-0.011, -0.0077] | <0.0001 | -0.0097 [-0.011, -0.0078] | <0.0001 |

**Supplementary table S1 legend:** Abbreviations: AHI, apnea hypopnea index; ODI, oxygen desaturation index; TST90, total sleep time with oxygen saturation below 90%; OSA, obstructive sleep apnea; SHBG, sex hormone binding globulin; BMI, body mass index.

**Supplementary Table S2:** Linear regression coefficients for the models of log total testosterone with OSA measures as discrete variables adjusting for log SHBG, age, BMI and study (FAMAS vs NWAHS).

**Table S2A**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Coef [95%CI] | p-value |  | Coef [95%CI] | p-value |
| AHI: Mild vs None | 0.045 [0.0017, 0.088] | 0.04 | ODI: Q2 vs Q1 | -0.017 [-0.067, 0.034] | 0.52 |
| AHI: Moderate vs None | 0.059 [0.0049, 0.11] | 0.03 | ODI: Q3 vs Q1 | 0.0092 [-0.043, 0.061] | 0.73 |
| AHI: Severe vs None | 0.014 [-0.047, 0.075] | 0.65 | ODI: Q4 vs Q1 | 0.013 [-0.041, 0.068] | 0.63 |
| SHBG log (M2) | 0.23 [0.21, 0.25] | <0.0001 | SHBG log (M2) | 0.23 [0.21, 0.25] | <0.0001 |
| BMI (M4) | -0.062 [-0.081, -0.043] | <0.0001 | BMI (M4) | -0.061 [-0.08, -0.041] | <0.0001 |
| Study | -0.2 [-0.24, -0.17] | <0.0001 | Study | -0.2 [-0.24, -0.16] | <0.0001 |
| Age (M4) | -0.1 [-0.12, -0.083] | <0.0001 | Age (M4) | -0.1 [-0.12, -0.081] | <0.0001 |

**Table S2B**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Coef [95%CI] | p-value |  | Coef [95%CI] | p-value |
| TST90: Q2 vs Q1 | -0.0083 [-0.059, 0.042] | 0.75 | Arousal: Q2 vs Q1 | 0.012 [-0.038, 0.061] | 0.65 |
| TST90: Q3 vs Q1 | 0.005 [-0.047, 0.057] | 0.85 | Arousal: Q3 vs Q1 | 0.02 [-0.03, 0.069] | 0.44 |
| TST90: Q4 vs Q1 | -0.0075 [-0.063, 0.048] | 0.79 | Arousal: Q4 vs Q1 | 0.011 [-0.039, 0.061] | 0.67 |
| SHBG log (M2) | 0.23 [0.21, 0.25] | <0.0001 | SHBG log (M2) | 0.23 [0.21, 0.25] | <0.0001 |
| BMI (M4) | -0.058 [-0.077, -0.038] | <0.0001 | BMI (M4) | -0.058 [-0.076, -0.04] | <0.0001 |
| Study | -0.2 [-0.24, -0.16] | <0.0001 | Study | -0.2 [-0.24, -0.16] | <0.0001 |
| Age (M4) | -0.098 [-0.12, -0.079] | <0.0001 | Age (M4) | -0.098 [-0.12, -0.08] | <0.0001 |

**Supplementary Table 2 Legend:** Table S2A: linear regression coefficients for AHI and ODI. Table S2B: linear regression coefficients for TST90 and arousal index. In these models ODI, TST90 and arousal index are discretised into quartiles. AHI is discretised according to OSA severity cut-off thresholds. Abbreviations: AHI, apnea hypopnea index; ODI, oxygen desaturation index; TST90, total sleep time with oxygen saturation below 90%; OSA, obstructive sleep apnea; SHBG, sex hormone binding globulin; BMI, body mass index