

Type 2 diabetes mellitus is associated with disruptions as a function of metabolic control

M. Trento¹, F. Riganti¹, M. Tomelini¹, P. Passera, F. Broglio¹, E. van Cauter², M. Porta¹, E. Ghigo¹

¹Department of Internal Medicine, University of Turin, Italy; ²Department of Medicine, University of Chicago, IL, USA

Background and aims Sleep disturbances may be an independent risk factor for glucose intolerance and, in type 2 diabetes mellitus (T2DM), sleep disruption was shown to correlate with metabolic control. We aimed at evaluating sleep quality in non-obese T2DM patients treated with oral agents and without complications. **Methods** Sleep recording was performed in 25 middle-aged T2DM patients and 18 age- and sex-matched healthy controls subjects (CS) by wrist actigraphy (Actiwatch, MiniMitterCo, USA) on three consecutive working days in free living conditions. Data were analysed using ActiwareSleepSoftware. **Results** There were no significant differences between T2DM and CS in terms of time in bed (mean±SD 7h40'±0h53' vs 7h36'±1h06'), actual sleep time (6h25'±0h52' vs 6h36'±1h03'), sleep efficiency (83.77±6.92 vs 86.81±4.19%) and sleep latency (11'±11' vs 09'±07'). However, T2DM patients showed lower (p<0.05) actual sleep percentage (88.77±4.56 vs 91.27±3.15%), higher (p<0.01) fragmentation index (21.10±8.14 vs 15.26±3.90), higher (p<0.05) total activity score during night-time (7822±3596 vs 6339±3672) and increased (p<0.01) moving time percentage (11.26±5.09 vs 7.88±1.50%). In T2DM, HbA1c correlated negatively with sleep efficiency (r=-0.624; p<0.01) and actual sleep percentage (r=-0.585; p<0.01) and positively with fragmentation index (r=0.576; p<0.01), moving time percentage (r=0.651; p<0.01) and mean activity score during night-time (r=0.493; p<0.05). **Discussion** These data suggest that T2DM is associated with quantitative and qualitative sleep disruption which correlate with metabolic control, even in the absence of complications.