Reduced physical activity in stable renal transplanted patients

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Background

- Renal Transplant is burdened by huge cardiovascular mortality which is 10 to 50 fold higher than general population, due to worsened CV risk factors
- Reduced physical activity is modifiable major one of such CV risk factors and it favors other cardiovascular risk factors (diabetes, dyslipidemia, obesity, metabolic syndrome, hypertension)
- In renal transplant patients physical activity may impact on both graft and patient survival, but no reliable data on physical activity exist in renal transplant patients

Aim

This study aimed at measuring duration and intensity of physical activity in stable renal transplant patients

Subjects & Groups

- Observational, cohort, controlled, study
- Consecutive, adult patients with stable renal transplant (from at least 6 months) in absence of any acute disease (from al least 3 months) [**RTx group**]
- Healthy controls (subjects without renal disease) matched for age, socio-economic and cultural status [**CON group**]

Measurements

All subjects of both groups underwent to:

A. **Anthropometry** (weight; height)

B. **Continuous measurements of Physical Activity** (duration and intensity) along three consecutive days by mean of *SenseWear Armband* ® (BodyMedia, Pittsburgh, USA), a clinically-validated accelerometer device able to collect in a free-living context:
   - daily number of steps
   - daily physical activity duration
   - physical activity intensity

C. Evaluation of **Subjective Physical Activity** by administration of a validate IPAQ questionnaire

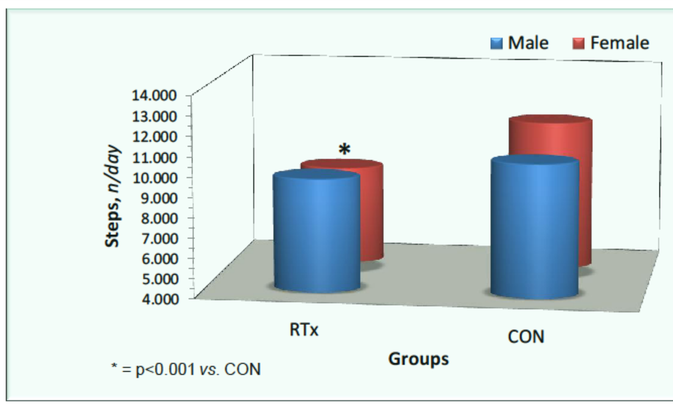
Subjects Characteristics

	RTx	CON	*p*
Subjects, *n*	110	110	
Gender, *m/f*	51/59	51/59	
Age, *years*	46.8±11.0	48.1±13.5	0.412
RTx-age, *years*	8.0±6.9	---	
Weight, *kg*	74.5±14.8	75.3±13.7	0.707
BMI, *kg/m²*	28.0±5.1	27.2±5.5	0.317

Continuous Physical Activity - PA

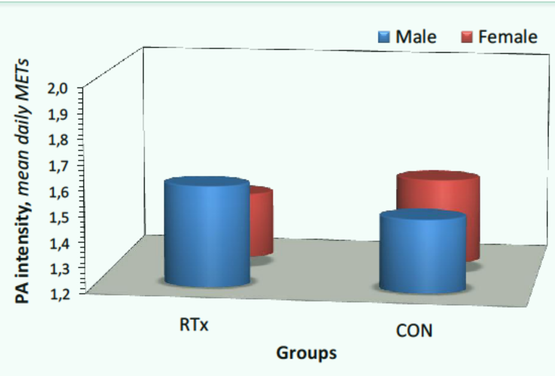
	RTx	CON	*p*
Steps, *n/day*	9.278±4.179	11.108±4.030	0.001
PA Intensity, *mean daily METs*	1.53±3.20	1.52±3.20	0.844
Intense PA duration, *min/day*	129±114	136±113	0.633

Duration of PA [steps]

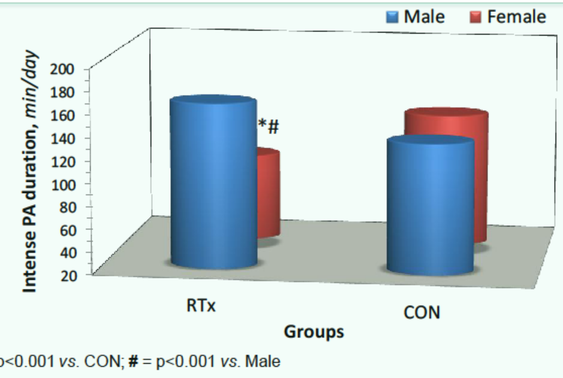


* = p<0.001 *vs.* CON

Intensity of PA [METs]

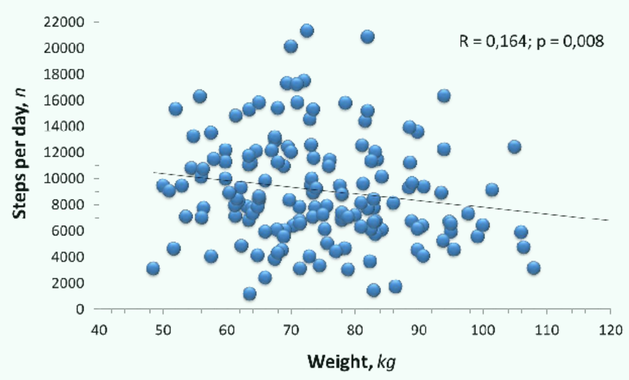


Duration of Intense PA [> 3,0 METs]

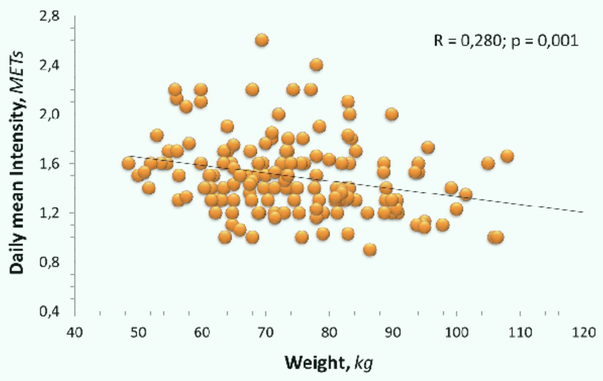


* = p<0.001 *vs.* CON; **#** = p<0.001 *vs.* Male

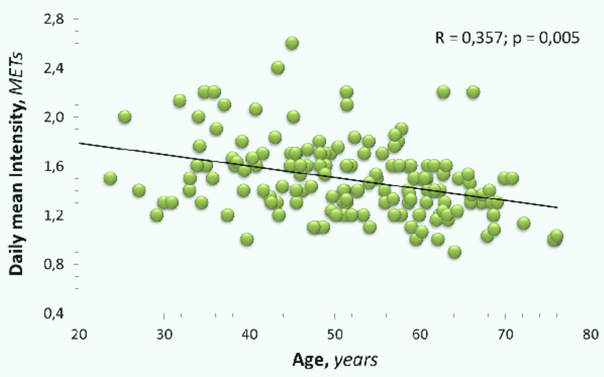
Duration of PA [steps] *vs.* Body Weight



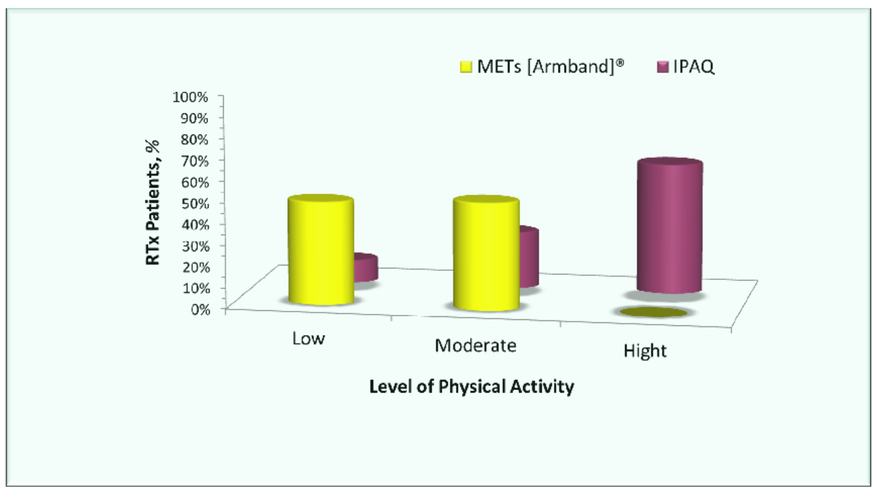
Intensity of PA [METs] *vs.* Body Weight



Intensity of PA [METs] *vs.* Age



Subjective [IPAQ] *vs.* Objective [METs] PA



Conclusions

- Renal transplanted patients have a reduced physical activity, mainly as duration but also as intensity, in female group at least
- Reduced physical activity is age and gender related and the major modifiable determinant is increased body weight
- Despite the low physical activity, renal transplanted patients has a subjective perception of adequate physical activity

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Transplantation - clinical studies II
Vincenzo Bellizzi
DOI: 10.3252/pso.eu.50era.2013
Poster presented at: ERA-EDTA 50th Congress Istanbul, Turkey May 15-21, 2013
PosterSessionOnline.com