



Data Article

Postural control data from prevalent kidney transplant patients with and without history of falls



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ABSTRACT

This article presents data from a research paper entitled “Postural balance, muscle strength, and history of falls in end-stage renal disease patients living with a kidney transplant: a cross-sectional study” available in Journal Gait and Posture [1]. In this article, we reported the minimal detectable changes at the 95% level of confidence (MDC₉₅) of postural balance variables measured in eyes open (EO) and eyes closed (EC) conditions, with a stabilometric platform, in 59 kidney transplant (KT) recipients (mean age = 53.2 ± 11 years). In addition, we also performed receiver operating characteristics (ROC) curve analysis to explore the ability of postural balance measures to discriminate fallers and non-fallers (history of falls: yes or no). Sensitivity, specificity and area under the curve (AUC) of mean center of pressure velocity (CoPv), sway area (SA), center of pressure range of displacement in the anterior-posterior (AP) and medio-lateral (ML) directions were calculated. These data can be used by researchers aiming to design psychometric studies of postural balance in KT patients and they also provide clinicians with information on possible prioritization of outcome as-

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assessment for future fall-risk research in this clinical population.

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Specifications Table

Subject	Medicine and Dentistry
Specific subject area	Orthopedics, Sports Medicine and Rehabilitation
Type of data	Table Graph
How data were acquired	Posturography. Stabilometric platform ARGO (RGMD, Genova, IT).
Data format	Raw Analyzed
Parameters for data collection	Static postural balance was assessed on a stabilometric platform in eyes open (EO) and eyes closed (EC) conditions with feet together.
Description of data collection	Participants were instructed to stand upright, and as still as possible, on the stabilometric platform for the whole duration of data acquisition. Each testing condition (EO and EC) was executed twice, data were recorded for 30 s during each test, and results of the two trials were averaged for data analysis. The following postural balance variables were recorded: mean center of pressure velocity (CoPv), sway area (SA), center of pressure displacement in the anterior-posterior (AP) and medio-lateral (ML) directions. All variables were recorded with a sampling rate of 100 Hz.
Data source location	Sport and Exercise Medicine Division, University of Padova. Padova (PD). Italy.
Data accessibility	With the article.
Related research article	T. Zanotto, S. Gobbo, V. Bullo, B. Vendramin, E. Roma, F. Duregon, D. S. Bocalini, A. Di Blasio, L. Cugusi, L. Furian, C. Di Bella, D. Neunhaeuserer, F. Battista, M. Bergamin, A. Ermolao. Postural balance, muscle strength, and history of falls in end-stage renal disease patients living with a kidney transplant: a cross-sectional study. <i>Gait and Posture</i> , 2020. 76: p. 358–363. doi:10.1016/j.gaitpost.2019.12.031.

Value of the Data

- Postural balance data from this dataset are valuable as static posturography is commonly utilized to detect fall-risk in clinical populations.
- Researchers aiming to design psychometric studies of postural balance in KT patients can benefit from the MDC₉₅ data provided in this article.
- This dataset can be used to develop larger observational studies and/or to perform secondary analyses of postural control in KT patients.
- The ROC analysis described in this article provide additional value as there is currently very limited data on sensitivity and specificity of static posturography to detect fall-risk in this clinical population.

1. Data Description

This article describes postural control data of kidney transplant patients, with and without history of falls, from a previous publication [1]. The full dataset is presented in supplementary file 1 (S1) and describes the postural balance performance of research participants, as assessed through center of pressure (CoP) measures of range, velocity and area during static posturography. In Table 1, we report the minimal detectable changes (MDC) of the postural balance variables (measured in study [1]) calculated from the 95% confidence interval (CI) of the intra-class

Table 1

Minimal detectable changes of the postural balance variables.

Variables	ICC (95% Confidence Interval)	SEM	MDC ₉₅
Postural balance in EO			
CoPv (mm/s)	0.892 (0.808 – 0.939)	2.07	5.75
SA (mm ² /s)	0.861 (0.753 – 0.922)	11.74	32.54
AP (mm)	0.787 (0.621 – 0.881)	3.81	10.57
ML (mm)	0.862 (0.754 – 0.923)	8.79	24.37
Postural balance in EC			
CoPv (mm/s)	0.891 (0.717 – 0.949)	3.16	8.76
SA (mm ² /s)	0.828 (0.670 – 0.908)	15	41.57
AP (mm)	0.665 (0.389 – 0.815)	5.14	14.25
ML (mm)	0.782 (0.608 – 0.879)	5.02	13.91

Abbreviations: ICC: intra-class correlation coefficient; SEM: standard error of measurement; MDC₉₅: minimal detectable change at the 95% level of confidence; EO: eyes open; EC: eyes closed; CoPv: mean center of pressure velocity; SA: sway area; AP: range of CoP displacement in the anterior-posterior axis; ML: range of CoP displacement in the medial-lateral axis.

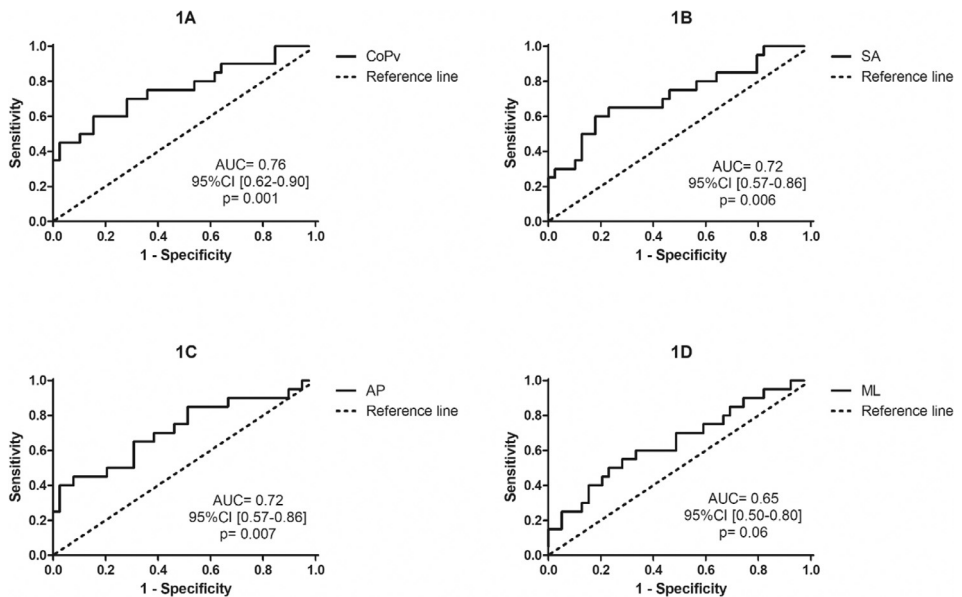


Fig. 1. ROC curve analysis of postural balance in EO (fallers vs non-fallers). **Legend.** AUC: area under the curve; CI: confidence interval; **Fig. 1A** displays ROC curve analysis of mean center of pressure velocity (CoPv); **Fig. 1B** displays ROC curve analysis of sway area (SA); **Fig. 1C** displays ROC curve analysis of range of center of pressure displacement in the anterior-posterior axis (AP); **Fig. 1D** displays ROC curve analysis of range of center of pressure displacement in the medial-lateral axis (ML).

correlation coefficients (ICC) of the same variables. The ICC estimates were computed with SPSS (Version 23.0 for Windows, SPSS Inc., Chicago, IL) by means of a single measurement, absolute agreement, two-way mixed-effects model [2]. The standard error of measurement (SEM) was then calculated as: $SEM = SD \cdot \sqrt{1-ICC}$, where SD represents the standard deviation of the first out of the two postural balance measurements. Lastly, the MDC at the 95% level of confidence (MDC₉₅) were calculated with the following formula: $MDC_{95} = 1.96 \cdot SEM \cdot \sqrt{2}$.

The ROC curve analysis of postural balance measures (CoPv, SA, AP, ML), in EO conditions, discriminating fallers from non-fallers (history of falls: yes or no) is displayed in **Fig. 1**. In addition, the sensitivity and specificity values of CoPv, SA, AP, ML in EO are summarized in **Tables 2–5** respectively. The ROC curve analysis of postural balance measures (CoPv, SA, AP, ML), in EC conditions, discriminating fallers from non-fallers (history of falls: yes or no) is displayed in **Fig. 2**.

Table 2

ROC curve analysis: sensitivity and specificity of CoPv in EO.

CoPv (mm/s)	Sensitivity	95%CI	Specificity	95%CI	TPR/FPR
> 11.70	1.00	0.83 - 1.00	0.15	0.06 - 0.31	1.18
> 11.93	0.95	0.75 - 1.00	0.15	0.06 - 0.31	1.12
> 12.10	0.90	0.68 - 0.99	0.15	0.06 - 0.31	1.06
> 12.42	0.90	0.68 to 0.99	0.21	0.09 to 0.37	1.13
> 12.96	0.90	0.68 to 0.99	0.23	0.11 to 0.39	1.17
> 13.86	0.90	0.68 to 0.99	0.26	0.13 to 0.42	1.21
> 14.41	0.90	0.68 to 0.99	0.28	0.15 to 0.45	1.25
> 14.85	0.90	0.68 to 0.99	0.33	0.19 to 0.50	1.35
> 15.07	0.85	0.62 to 0.97	0.36	0.21 to 0.53	1.33
> 15.24	0.85	0.62 to 0.97	0.38	0.23 to 0.55	1.38
> 15.39	0.80	0.56 to 0.94	0.38	0.23 to 0.55	1.30
> 15.72	0.75	0.51 to 0.91	0.46	0.30 to 0.63	1.39
> 15.78	0.75	0.51 to 0.91	0.48	0.32 to 0.65	1.46
> 15.93	0.75	0.51 to 0.91	0.59	0.42 to 0.74	1.83
> 16.55	0.75	0.51 to 0.91	0.64	0.47 to 0.79	2.09
> 16.65	0.70	0.46 to 0.88	0.64	0.47 to 0.79	1.95
> 17.14	0.70	0.46 to 0.88	0.72	0.55 to 0.85	2.48
> 17.46	0.65	0.41 to 0.85	0.72	0.55 to 0.85	2.30
> 17.84	0.60	0.36 to 0.81	0.72	0.55 to 0.85	2.13
> 18.15	0.60	0.36 to 0.81	0.77	0.61 to 0.89	2.60
> 18.72	0.60	0.36 to 0.81	0.82	0.66 to 0.92	3.34
> 18.86	0.60	0.36 to 0.81	0.85	0.69 to 0.94	3.90
> 18.99	0.55	0.32 to 0.77	0.85	0.69 to 0.94	3.58
> 19.60	0.50	0.27 to 0.73	0.8718	0.73 to 0.96	3.90
> 20.09	0.50	0.27 to 0.73	0.8974	0.76 to 0.97	4.88
> 21.26	0.45	0.23 to 0.68	0.9231	0.79 to 0.98	5.85
> 22.55	0.45	0.23 to 0.68	0.9744	0.87 to 1.00	17.55
> 23.47	0.40	0.19 to 0.64	0.9744	0.87 to 1.00	15.60
> 24.41	0.35	0.15 to 0.59	0.9744	0.87 to 1.00	13.65

Abbreviations: CoPv: mean center of pressure velocity; EO: eyes open; CI: confidence interval; TPR: true positive rate; FPR: false positive rate.

In addition, the sensitivity and specificity values of CoPv, SA, AP, ML in EC are summarized in [Tables 6–9](#) respectively.

Table 3

ROC curve analysis: sensitivity and specificity of SA in EO.

SA (mm ² /s)	Sensitivity	95%CI	Specificity	95%CI	TPR/FPR
> 18.47	1.00	0.83 to 1.0	0.18	0.08 to 0.34	1.22
> 21.42	0.95	0.75 to 1.00	0.21	0.09 to 0.36	1.20
> 22.93	0.90	0.68 to 0.99	0.21	0.09 to 0.36	1.13
> 23.90	0.85	0.62 to 0.97	0.23	0.11 to 0.39	1.11
> 24.76	0.85	0.62 to 0.97	0.28	0.15 to 0.45	1.18
> 24.99	0.85	0.62 to 0.97	0.33	0.19 to 0.50	1.27
> 25.12	0.85	0.62 to 0.97	0.36	0.21 to 0.53	1.33
> 25.82	0.80	0.56 to 0.94	0.38	0.23 to 0.55	1.30
> 26.60	0.80	0.56 to 0.94	0.44	0.28 to 0.60	1.42
> 27.27	0.75	0.51 to 0.91	0.46	0.30 to 0.63	1.39
> 29.16	0.75	0.51 to 0.91	0.51	0.35 to 0.68	1.54
> 30.84	0.75	0.51 to 0.91	0.54	0.37 to 0.70	1.63
> 32.58	0.70	0.46 to 0.88	0.54	0.37 to 0.70	1.52
> 35.26	0.70	0.46 to 0.88	0.56	0.40 to 0.72	1.61
> 37.06	0.65	0.41 to 0.85	0.59	0.42 to 0.74	1.58

*(continued on next page)***Table 3** (continued)

SA (mm ² /s)	Sensitivity	95%CI	Specificity	95%CI	TPR/FPR
> 38.11	0.65	0.41 to 0.85	0.62	0.45 to 0.77	1.69
> 39.44	0.65	0.41 to 0.85	0.64	0.47 to 0.79	1.81
> 40.80	0.65	0.41 to 0.85	0.69	0.52 to 0.83	2.11
> 41.57	0.65	0.41 to 0.85	0.74	0.58 to 0.87	2.54
> 43.43	0.65	0.41 to 0.85	0.77	0.61 to 0.89	2.82
> 47.42	0.60	0.36 to 0.81	0.80	0.64 to 0.91	2.92
> 49.25	0.60	0.36 to 0.81	0.82	0.66 to 0.93	3.34
> 49.79	0.55	0.32 to 0.77	0.82	0.67 to 0.93	3.06
> 51.36	0.50	0.27 to 0.73	0.85	0.69 to 0.94	3.25
> 52.14	0.45	0.23 to 0.68	0.87	0.73 to 0.96	3.51
> 54.04	0.40	0.19 to 0.64	0.87	0.73 to 0.96	3.12
> 56.56	0.35	0.15 to 0.59	0.90	0.76 to 0.97	3.41
> 57.23	0.30	0.12 to 0.54	0.92	0.79 to 0.98	3.90
> 66.65	0.25	0.087 to 0.49	0.97	0.87 to 1.00	9.75

Abbreviations: SA: sway area; EO: eyes open; CI: confidence interval; TPR: true positive rate; FPR: false positive rate.

Table 4
ROC curve analysis: sensitivity and specificity of AP in EO.

AP (mm)	Sensitivity	95%CI	Specificity	95%CI	TPR/FPR
> 11.58	1.00	0.83 to 1.00	0.05	0.01 to 0.17	1.05
> 13.40	0.95	0.75 to 1.00	0.08	0.02 to 0.21	1.03
> 15.77	0.90	0.68 to 0.99	0.13	0.04 to 0.27	1.03
> 17.08	0.90	0.68 to 0.99	0.18	0.08 to 0.34	1.10
> 18.89	0.90	0.68 to 0.99	0.33	0.19 to 0.50	1.35
> 19.52	0.85	0.62 to 0.97	0.36	0.21 to 0.53	1.33
> 20.63	0.85	0.62 to 0.97	0.44	0.28 to 0.60	1.51
> 20.99	0.85	0.62 to 0.97	0.49	0.32 to 0.65	1.66
> 21.01	0.80	0.56 to 0.94	0.49	0.32 to 0.65	1.56
> 22.04	0.75	0.51 to 0.91	0.51	0.35 to 0.68	1.54
> 22.23	0.75	0.51 to 0.91	0.54	0.37 to 0.70	1.63
> 23.23	0.70	0.46 to 0.88	0.56	0.40 to 0.72	1.61
> 23.38	0.70	0.46 to 0.88	0.59	0.42 to 0.74	1.71
> 23.50	0.70	0.46 to 0.88	0.62	0.45 to 0.77	1.82
> 24.72	0.65	0.41 to 0.85	0.64	0.47 to 0.79	1.81
> 25.41	0.65	0.41 to 0.85	0.69	0.52 to 0.83	2.11
> 25.62	0.60	0.36 to 0.81	0.69	0.52 to 0.83	1.95
> 25.91	0.55	0.32 to 0.77	0.69	0.52 to 0.83	1.79
> 27.12	0.50	0.27 to 0.73	0.74	0.58 to 0.87	1.95
> 28.59	0.50	0.27 to 0.73	0.79	0.64 to 0.91	2.44
> 29.19	0.45	0.23 to 0.68	0.79	0.64 to 0.91	2.19
> 29.54	0.45	0.23 to 0.68	0.82	0.66 to 0.92	2.51
> 30.78	0.45	0.23 to 0.68	0.90	0.76 to 0.97	4.39
> 32.11	0.45	0.23 to 0.68	0.92	0.79 to 0.98	5.85
> 32.77	0.40	0.19 to 0.64	0.92	0.79 to 0.98	5.20
> 33.74	0.40	0.19 to 0.64	0.97	0.87 to 1.00	15.60
> 34.23	0.35	0.15 to 0.59	0.97	0.87 to 1.00	13.65
> 34.26	0.30	0.12 to 0.54	0.97	0.87 to 1.00	11.70
> 35.41	0.25	0.09 to 0.49	0.97	0.87 to 1.00	9.75

Abbreviations: AP: range of CoP displacement in the anterior-posterior axis; EO: eyes open; CI: confidence interval; TPR: true positive rate; FPR: false positive rate.

Table 5
ROC curve analysis: sensitivity and specificity of ML in EO.

ML (mm)	Sensitivity	95%CI	Specificity	95%CI	TPR/FPR
> 15.51	1.00	0.83 to 1.00	0.08	0.01 to 0.17	1.08
> 19.22	0.95	0.75 to 1.00	0.13	0.02 to 0.21	1.09
> 20.24	0.95	0.68 to 0.99	0.18	0.04 to 0.27	1.16
> 20.76	0.90	0.68 to 0.99	0.21	0.08 to 0.34	1.13
> 21.22	0.90	0.68 to 0.99	0.26	0.19 to 0.50	1.21
> 21.48	0.85	0.62 to 0.97	0.28	0.21 to 0.53	1.18
> 21.56	0.85	0.62 to 0.97	0.31	0.28 to 0.60	1.23
> 21.79	0.80	0.62 to 0.97	0.31	0.32 to 0.65	1.16
> 22.51	0.80	0.56 to 0.94	0.33	0.32 to 0.65	1.20
> 23.17	0.75	0.51 to 0.91	0.36	0.35 to 0.68	1.17
> 23.65	0.75	0.51 to 0.91	0.41	0.37 to 0.70	1.27
> 24.50	0.70	0.46 to 0.88	0.44	0.40 to 0.72	1.24
> 25.57	0.70	0.46 to 0.88	0.51	0.42 to 0.74	1.44
> 26.29	0.65	0.46 to 0.88	0.51	0.45 to 0.77	1.33
> 26.71	0.60	0.41 to 0.85	0.51	0.47 to 0.79	1.23
> 28.55	0.60	0.41 to 0.85	0.56	0.52 to 0.83	1.38
> 31.05	0.60	0.36 to 0.81	0.67	0.52 to 0.83	1.80
> 31.34	0.55	0.32 to 0.77	0.67	0.52 to 0.83	1.65
> 31.58	0.55	0.27 to 0.73	0.72	0.58 to 0.87	1.95
> 31.72	0.50	0.27 to 0.73	0.72	0.64 to 0.91	1.77
> 32.43	0.50	0.23 to 0.68	0.77	0.64 to 0.91	2.17
> 32.77	0.45	0.23 to 0.68	0.79	0.66 to 0.92	2.19
> 33.95	0.40	0.23 to 0.68	0.85	0.76 to 0.97	2.60
> 34.78	0.35	0.23 to 0.68	0.85	0.79 to 0.98	2.27
> 35.97	0.30	0.19 to 0.64	0.87	0.79 to 0.98	2.34
> 37.18	0.25	0.19 to 0.64	0.90	0.87 to 1.00	2.44
> 38.77	0.25	0.15 to 0.59	0.95	0.87 to 1.00	4.87
> 39.40	0.20	0.12 to 0.54	0.95	0.87 to 1.00	3.90
> 47.02	0.15	0.09 to 0.49	0.97	0.87 to 1.00	5.85

Abbreviations: ML: range of CoP displacement in the medial-lateral axis; EO: eyes open; CI: confidence interval; TPR: true positive rate; FPR: false positive rate.

Table 6
ROC curve analysis: sensitivity and specificity of CoPv in EC.

CoPv (mm/s)	Sensitivity	95%CI	Specificity	95%CI	TPR/FPR
> 14.63	1.00	0.83 to 1.00	0.10	0.01 to 0.17	1.11
> 14.98	0.95	0.75 to 1.00	0.13	0.02 to 0.21	1.09
> 16.67	0.95	0.68 to 0.99	0.21	0.04 to 0.27	1.20
> 17.61	0.90	0.68 to 0.99	0.23	0.08 to 0.34	1.17
> 18.76	0.85	0.68 to 0.99	0.26	0.19 to 0.50	1.14
> 19.02	0.85	0.62 to 0.97	0.31	0.21 to 0.53	1.23
> 19.64	0.85	0.62 to 0.97	0.33	0.28 to 0.60	1.27
> 20.75	0.80	0.62 to 0.97	0.36	0.32 to 0.65	1.25
> 20.98	0.80	0.56 to 0.94	0.41	0.32 to 0.65	1.36
> 21.66	0.80	0.51 to 0.91	0.46	0.35 to 0.68	1.49
> 22.10	0.80	0.51 to 0.91	0.49	0.37 to 0.70	1.56
> 22.48	0.75	0.46 to 0.88	0.51	0.40 to 0.72	1.54
> 22.70	0.75	0.46 to 0.88	0.54	0.42 to 0.74	1.63
> 23.43	0.70	0.46 to 0.88	0.56	0.45 to 0.77	1.61
> 24.64	0.70	0.41 to 0.85	0.64	0.47 to 0.79	1.95

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Table 6 (continued)

CoPv (mm/s)	Sensitivity	95%CI	Specificity	95%CI	TPR/FPR
> 25.33	0.70	0.41 to 0.85	0.69	0.52 to 0.83	2.27
> 26.07	0.70	0.36 to 0.81	0.74	0.52 to 0.83	2.73
> 26.93	0.65	0.32 to 0.77	0.74	0.52 to 0.83	2.54
> 27.47	0.60	0.27 to 0.73	0.74	0.58 to 0.87	2.34
> 28.18	0.60	0.27 to 0.73	0.79	0.64 to 0.91	2.92
> 28.74	0.55	0.23 to 0.68	0.85	0.64 to 0.91	3.58
> 30.95	0.50	0.23 to 0.68	0.87	0.66 to 0.92	3.90
> 32.72	0.45	0.23 to 0.68	0.90	0.76 to 0.97	4.39
> 33.99	0.40	0.23 to 0.68	0.92	0.79 to 0.98	5.20
> 34.15	0.40	0.19 to 0.64	0.95	0.79 to 0.98	7.80
> 35.33	0.35	0.19 to 0.64	0.95	0.87 to 1.00	6.82
> 37.70	0.30	0.15 to 0.59	0.97	0.87 to 1.00	11.70
> 40.26	0.25	0.12 to 0.54	0.97	0.87 to 1.00	9.75
> 42.23	0.20	0.09 to 0.49	0.97	0.87 to 1.00	7.80

Abbreviations: CoPv: mean center of pressure velocity; EC: eyes closed; CI: confidence interval; TPR: true positive rate; FPR: false positive rate.

Table 7
ROC curve analysis: Sensitivity and specificity of SA in EC.

SA (mm ² /s)	Sensitivity	95%CI	Specificity	95%CI	TPR/FPR
> 19.78	1.00	0.83 to 1.00	0.08	0.01 to 0.17	1.08
> 23.84	0.95	0.75 to 1.00	0.10	0.02 to 0.21	1.06
> 29.09	0.90	0.68 to 0.99	0.15	0.04 to 0.27	1.06
> 33.34	0.85	0.68 to 0.99	0.23	0.08 to 0.34	1.11
> 34.12	0.85	0.68 to 0.99	0.28	0.19 to 0.50	1.18
> 34.68	0.80	0.62 to 0.97	0.31	0.21 to 0.53	1.16
> 36.96	0.80	0.62 to 0.97	0.33	0.28 to 0.60	1.20
> 40.42	0.75	0.62 to 0.97	0.38	0.32 to 0.65	1.22
> 43.12	0.75	0.56 to 0.94	0.44	0.32 to 0.65	1.33
> 45.73	0.75	0.51 to 0.91	0.46	0.35 to 0.68	1.39
> 48.07	0.70	0.51 to 0.91	0.49	0.37 to 0.70	1.37
> 50.31	0.70	0.46 to 0.88	0.54	0.40 to 0.72	1.52
> 51.30	0.70	0.46 to 0.88	0.56	0.42 to 0.74	1.61
> 52.65	0.70	0.46 to 0.88	0.62	0.45 to 0.77	1.82
> 53.51	0.70	0.41 to 0.85	0.64	0.47 to 0.79	1.95
> 54.54	0.70	0.41 to 0.85	0.67	0.52 to 0.83	2.10
> 55.39	0.70	0.36 to 0.81	0.69	0.52 to 0.83	2.27
> 57.41	0.65	0.32 to 0.77	0.69	0.52 to 0.83	2.11
> 59.86	0.65	0.27 to 0.73	0.74	0.58 to 0.87	2.54
> 61.47	0.65	0.27 to 0.73	0.77	0.64 to 0.91	2.82
> 64.11	0.65	0.23 to 0.68	0.82	0.64 to 0.91	3.62
> 66.60	0.60	0.23 to 0.68	0.82	0.66 to 0.92	3.34
> 73.45	0.55	0.23 to 0.68	0.85	0.76 to 0.97	3.58
> 74.25	0.55	0.23 to 0.68	0.87	0.79 to 0.98	4.29
> 74.71	0.50	0.19 to 0.64	0.87	0.79 to 0.98	3.90
> 80.33	0.45	0.19 to 0.64	0.87	0.87 to 1.00	3.51
> 90.80	0.40	0.15 to 0.59	0.90	0.87 to 1.00	3.90
> 103.1	0.35	0.12 to 0.54	0.95	0.87 to 1.00	6.82
> 111.5	0.30	0.09 to 0.49	0.97	0.87 to 1.00	11.70

Abbreviations: SA: sway area; EC: eyes closed; CI: confidence interval; TPR: true positive rate; FPR: false positive rate.

Table 8

ROC curve analysis: Sensitivity and specificity of AP in EC.

AP (mm)	Sensitivity	95%CI	Specificity	95%CI	TPR/FPR
> 18.33	1.00	0.83 to 1.00	0.15	0.01 to 0.17	1.18
> 19.61	0.95	0.75 to 1.00	0.15	0.02 to 0.21	1.12
> 22.96	0.90	0.68 to 0.99	0.21	0.04 to 0.27	1.13
> 23.83	0.90	0.68 to 0.99	0.23	0.08 to 0.34	1.17
> 24.30	0.85	0.68 to 0.99	0.31	0.19 to 0.50	1.23
> 24.37	0.85	0.62 to 0.97	0.33	0.21 to 0.53	1.27
> 24.82	0.80	0.62 to 0.97	0.36	0.28 to 0.60	1.25
> 25.36	0.80	0.62 to 0.97	0.38	0.32 to 0.65	1.30
> 26.61	0.75	0.56 to 0.94	0.44	0.32 to 0.65	1.33
> 27.24	0.70	0.51 to 0.91	0.46	0.35 to 0.68	1.30
> 27.66	0.70	0.51 to 0.91	0.54	0.37 to 0.70	1.52
> 28.44	0.65	0.46 to 0.88	0.56	0.40 to 0.72	1.49
> 29.71	0.65	0.46 to 0.88	0.62	0.42 to 0.74	1.69
> 30.51	0.65	0.46 to 0.88	0.64	0.45 to 0.77	1.81
> 31.66	0.65	0.41 to 0.85	0.69	0.47 to 0.79	2.11
> 32.26	0.65	0.41 to 0.85	0.72	0.52 to 0.83	2.30
> 32.55	0.65	0.36 to 0.81	0.77	0.52 to 0.83	2.82
> 32.72	0.65	0.32 to 0.77	0.79	0.52 to 0.83	3.17
> 33.02	0.65	0.27 to 0.73	0.82	0.58 to 0.87	3.62
> 33.39	0.60	0.27 to 0.73	0.82	0.64 to 0.91	3.34
> 34.12	0.60	0.23 to 0.68	0.85	0.64 to 0.91	3.90
> 35.00	0.55	0.23 to 0.68	0.85	0.66 to 0.92	3.58
> 35.39	0.50	0.23 to 0.68	0.85	0.76 to 0.97	3.25
> 35.53	0.45	0.23 to 0.68	0.85	0.79 to 0.98	2.92
> 35.88	0.40	0.19 to 0.64	0.85	0.79 to 0.98	2.60
> 36.13	0.35	0.19 to 0.64	0.85	0.87 to 1.00	2.27
> 39.02	0.30	0.15 to 0.59	0.90	0.87 to 1.00	2.93
> 42.11	0.25	0.12 to 0.54	0.95	0.87 to 1.00	4.87
> 45.62	0.20	0.09 to 0.49	0.97	0.87 to 1.00	7.80

Abbreviations: AP: range of CoP displacement in the anterior-posterior axis; EC: eyes closed; CI: confidence interval; TPR: true positive rate; FPR: false positive rate.

Table 9

ROC curve analysis: Sensitivity and specificity of ML in EC.

ML (mm)	Sensitivity	95%CI	Specificity	95%CI	TPR/FPR
> 22.22	0.95	0.83 to 1.00	0.18	0.01 to 0.17	1.16
> 23.41	0.90	0.75 to 1.00	0.18	0.02 to 0.21	1.10
> 24.30	0.90	0.68 to 0.99	0.21	0.04 to 0.27	1.13
> 24.62	0.90	0.68 to 0.99	0.23	0.08 to 0.34	1.17
> 25.00	0.85	0.68 to 0.99	0.23	0.19 to 0.50	1.11
> 25.33	0.85	0.62 to 0.97	0.26	0.21 to 0.53	1.14
> 25.50	0.85	0.62 to 0.97	0.28	0.28 to 0.60	1.18
> 25.98	0.85	0.62 to 0.97	0.33	0.32 to 0.65	1.27
> 27.35	0.80	0.56 to 0.94	0.36	0.32 to 0.65	1.25
> 28.56	0.80	0.51 to 0.91	0.41	0.35 to 0.68	1.36
> 28.85	0.80	0.51 to 0.91	0.46	0.37 to 0.70	1.49
> 29.20	0.80	0.46 to 0.88	0.51	0.40 to 0.72	1.64

(continued on next page)

Table 9 (continued)

ML (mm)	Sensitivity	95%CI	Specificity	95%CI	TPR/FPR
> 30.00	0.80	0.46 to 0.88	0.56	0.42 to 0.74	1.84
> 30.71	0.75	0.46 to 0.88	0.56	0.45 to 0.77	1.72
> 31.95	0.75	0.41 to 0.85	0.62	0.47 to 0.79	1.95
> 32.74	0.70	0.41 to 0.85	0.62	0.52 to 0.83	1.82
> 33.67	0.65	0.36 to 0.81	0.62	0.52 to 0.83	1.69
> 34.19	0.65	0.32 to 0.77	0.64	0.52 to 0.83	1.81
> 34.63	0.60	0.27 to 0.73	0.67	0.58 to 0.87	1.80
> 35.20	0.55	0.27 to 0.73	0.69	0.64 to 0.91	1.79
> 36.40	0.55	0.23 to 0.68	0.74	0.64 to 0.91	2.15
> 37.71	0.55	0.23 to 0.68	0.79	0.66 to 0.92	2.68
> 38.62	0.55	0.23 to 0.68	0.82	0.76 to 0.97	3.06
> 40.55	0.50	0.23 to 0.68	0.85	0.79 to 0.98	3.25
> 41.89	0.50	0.19 to 0.64	0.90	0.79 to 0.98	4.88
> 42.28	0.45	0.19 to 0.64	0.92	0.87 to 1.00	5.85
> 43.65	0.40	0.15 to 0.59	0.95	0.87 to 1.00	7.80
> 43.96	0.35	0.12 to 0.54	0.95	0.87 to 1.00	6.82
> 46.12	0.30	0.09 to 0.49	0.97	0.87 to 1.00	11.70

Abbreviations: ML: range of CoP displacement in the medial-lateral axis; EC: eyes closed; CI: confidence interval; TPR: true positive rate; FPR: false positive rate.

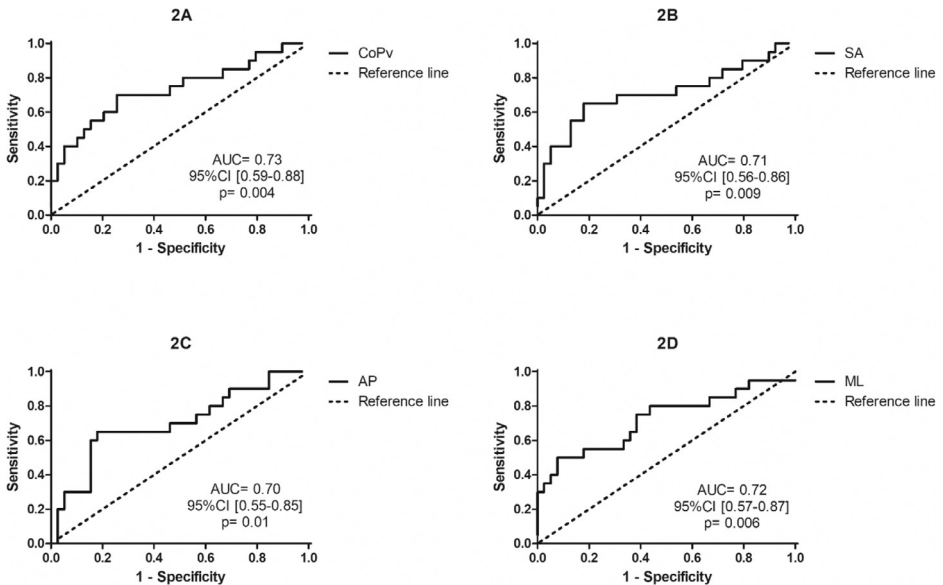


Fig. 2. ROC curve analysis of postural balance in EC (fallers vs non-fallers). **Legend.** AUC: area under the curve; CI: confidence interval; Fig. 2A displays ROC curve analysis of mean center of pressure velocity (CoPv); Fig. 2B displays ROC curve analysis of sway area (SA); Fig. 2C displays ROC curve analysis of range of center of pressure displacement in the anterior-posterior axis (AP); Fig. 2D displays ROC curve analysis of range of center of pressure displacement in the medial-lateral axis (ML).

2. Experimental design, materials, and methods

In a recent cross-sectional study we explored the association between postural balance and history of falls in a group of prevalent end-stage renal disease (ESRD) patients living with a kidney transplant (KT) [1]. Inclusion criteria were: age ≥ 18 years, able to provide written informed consent, male or female, and fluent in Italian. Exclusion criteria were: severe cognitive impairment (MMSE score < 24), lower limb amputees without prosthesis, uncorrected visual impairment, manifest neurologic pathology (e.g. Parkinson's disease, epilepsy), and inability to walk independently.

The study participants completed all postural balance assessments during a single visit, lasting about one hour, at the Sports Medicine Department, University of Padova, in the morning. Prior to the assessment day, participants were instructed to avoid smoking and caffeine or alcohol-containing beverages for at least two hours before the assessment. In addition, they were asked to refrain from unaccustomed physical exercise on the day preceding the assessment visit, and to adhere to their usual medication prescription. On the assessment day, one researcher (SG) collected the history of falls information from all participants, and administered the mini mental state examination (MMSE) as a screening tool for cognitive impairment [3], before the postural balance assessments.

History of falls was defined as the occurrence of at least one fall in the previous 12 months. One researcher administered a single-item survey to all participants, in which the following operational definition of a "fall" was provided: "an unexpected event in which the participant comes to rest on the ground, floor, or lower level" [4]. Participants reporting at least one fall were classified as fallers and they were also asked about the perceived cause of falling [1]. This falls appraisal method has been shown to have high specificity (91–95%) and relatively lower sensitivity (80–89%) compared to the criterion standard (prospective fall data recorded by means of falls diaries/postcards) [5].

Postural balance was measured by means of posturography with an ARGO stabilometric platform (RGMD, Genova, IT). Participants were instructed to stand upright, and as still as possible, on the stabilometric platform with feet together for the whole duration of data acquisition. Static balance was assessed in two conditions: eyes open (EO) and eyes closed (EC). In order to gain acceptable test-retest reliability of the postural balance variables, each testing condition (EO and EC) was executed twice, data were recorded for 30 s during each test, and results of the two trials were averaged for data analysis [6]. The order of the testing conditions was randomized, and the measurements were interspersed with short recovery times to reduce potential fatigue effects. The following variables were calculated and taken for the analysis: mean center of pressure (CoP) velocity (CoPv), sway area (SA), and CoP range of displacement in the anterior-posterior (AP) and medio-lateral (ML) directions [6–8]. These variables were collected at a sampling rate of 100 Hz, and raw data was filtered by the ARGO software (RGDM, Genova, IT), which uses a post-processing low-pass filtering with a 10 Hz frequency cutoff.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Ethics statement

The study conformed to the ethical principles for medical research involving human subjects, as set out by the world medical association declaration of Helsinki. The Ethics of the study were reviewed and approved by the University of Padova Ethics Committee. Participants provided written informed consent for this study.

Acknowledgments

None.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.dib.2020.105970](https://doi.org/10.1016/j.dib.2020.105970).

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