

Coffee consumption in hemodialysis patients: how many?

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Introduction

Fluid intake restriction is one of the most difficult challenges on maintenance hemodialysis (HD) patients. Beyond its caffeine content and effects on blood pressure control, coffee as a beverage can impair fluid control. The aim of this study is to evaluate the impact of coffee consumption on hydration and nutritional status of maintenance HD patients.

Results

Table 1. Patient's data

N	373
Age (years) ¹	67.2±14.4
Male (%)	54.7
Diabetics (%)	32.5
HD vintage (months) ¹	61.3±56.2

¹Values presented as Mean ± SD.



Methods

- Cross-sectional, multicenter study with 373 HD patients from eight dialysis centers in Portugal.
- A face-to-face questionnaire about fluid intake habits was applied and patient's clinical and body composition parameters were recorded with body composition monitor (Fresenius Medical Care®)
- The sample was divided into **3 groups** depending on their coffee consumption (≈50ml per coffee): group I – **don't drink coffee** (n=123; 33%); group II – **drink 1-2 coffees/day** (n=205; 55%); group III – **drink 3 or more coffees/day** (n=45; 12%).
- Statistical analysis was performed with SPSS 20.0. A P value less than 0.05 was considered statistically significant.

Table 2: Laboratory parameters and body composition: comparison between groups

	No coffee n= 123	1-2 coffees n= 205	≥ 3 coffees n= 45	p
Age (years)	68.2±16.6	68.9±12.3	57.0±13.2	<0.001
Interdialytic Weight Gain (%)	3.1±1.3	3.0±1.3	3.7±1.8	0.013
Phosphorus (mg/dL)	4.2±1.3	4.2±1.2	4.9±1.3	0.004
Potassium (mEq/dL)	5.1±0.8	5.2±0.7	5.5±0.8	0.020
Albumin (mg/dL)	3.9±0.4	3.9±0.4	4.1±0.4	0.007
Diastolic Blood Pressure (mmHg)	62.3±13.4	63.3±14.2	75.9±16.2	<0.001
Body Cell Mass Index (kg/m ²)	6.4±2.0	6.3±2.0	8.0±2.3	<0.001
Lean Tissue Index (kg/m ²)	12.0±2.8	11.9±2.8	14.2±3.3	<0.001
Overhydration (%)	8.4±7.7	7.9±7.9	6.9±7.5	0.616

Values presented as Mean ± SD.

Table 3: Logistic regression analysis: influence of coffee consumption in Interdialytic weight gain and diastolic blood pressure

	OR	p	ORa	p
Interdialytic Weight Gain (%)*				
G II: 1- 2 coffees/day	1.08 (0.54; 2.17)	0.826	1.37 (0.64; 2.93)	0.422
G III: ≥ 3 coffees/day	3.89 (1.69; 8.65)	0.001	2.62 (1.05;6.54)	0.04
Diastolic Blood Pressure (mmHg)**				
G II: 1- 2 coffees/day	1.66 (0.43; 6.41)	0.460	3.2 (0.64; 15.7)	0.156
G III: ≥ 3 coffees/day	9.11 (2.28; 36.46)	0.002	5.86 (1.18;29.15)	0.03

* Adjusted for: age, HD vintage, water and soup intake

** Adjusted for: age, HD vintage, interdialytic weight gain and relative overhydration

Regarding Group II (1-2 coffees/day), no differences were found in relation to group I (no coffee consumption).

Conclusion

Although taking **3 or more coffees/day** increases the risk of a higher diastolic blood pressure and **interdialytic weight gain**, it seems that drinking 1-2 coffees/day (≈50ml per coffee) has no significant effect in patients nutritional status neither interdialytic weight gain nor diastolic blood pressure.

