FRENCH PATIENTS IN DAILY HEMODIALYSIS: CHARACTERISTICS AND TRAJECTORIES

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INTRODUCTION AND OBJECTIVES

End Stage Renal Disease (ESRD) is a chronic progressive disease and a major public health concern due to the dramatically increased number of patients these last decades. Hemodialysis (HD) 3 times a week is the dominant practice dispensed by nephrologists [1]. In recent years, several studies have investigated the development of new HD regimens. It has been showed that the increased weekly frequency of dialysis sessions would be the most physiological regimen to reproduce the functional role of kidneys [2]. In France, patients in DHD represented 1% of prevalent cases in 2012 with regional disparities ranged from 0% to 5% [3]. Despite this approximate estimation of patients in DHD, there is a little information about DHD practices and characteristics of patients undergoing DHD in France.

Objectives: **The aim of this study was to describe the characteristics of French patients in DHD and their trajectories before starting such a program.**

METHODS

Data were extracted from the Renal Epidemiology and Information Network (REIN) registry.

Inclusion criteria:
❑ Age ≥ 18 years
❑ Starting a DHD in a French region participating to REIN between 2003 and 2012

Data collection:
➢ Patients'characteristics: socio-demographical, biological data, comorbidities and disabilities
➢ DHD's regimen: DHD modalities, number of weekly sessions, duration of session, DHD environment, vascular access
➢ Patient's trajectories: date of 1st Renal Replacement Therapy (RRT), changes of dialysis modalities, date of DHD initiation, medical status at the end of follow-up (12/31/2013)

Statistical analysis:
Patients' characteristics and DHD modalities have been described by subgroups and compared using Chi-square tests.

RESULTS

➢ 753 patients started a DHD between 2003 and 2012
➢ Patients' median age: **64 years**

Table 1. Patients' characteristics at DHD initiation

	Entire population (n=753) n (%)	<64 years (n=376) n (%)	≥64 years (n=377) n (%)	p
Gender				0.421
Male	478 (63.5)	244 (35)	234 (62)	
Female	275 (36.5)	132 (65)	143 (38)	
Albumin (g/dl)				<0.0001
<30	154 (20.5)	54 (14.4)	100 (26.5)	
≥30	490 (65.1)	265 (70.5)	225 (59.7)	
Missing	109 (14.5)	57 (15.2)	52 (13.8)	
Hemoglobin (g/dl)				0.263
<10	237 (31.5)	118 (31.4)	119 (31.6)	
[10-12]	295 (39.2)	137 (36.4)	158 (41.9)	
>12	172 (22.8)	92 (24.5)	80 (21.2)	
Missing	49 (6.5)	29 (7.7)	20 (5.3)	
Diabetes				<0.0001
Yes	291 (38.6)	109 (29)	182 (48.3)	
No	455 (60.4)	265 (70.5)	190 (50.4)	
Missing	7 (0.9)	2 (0.5)	5 (1.3)	
Active malignancies				0.002
Yes	101 (13.4)	36 (9.6)	65 (17.2)	
No	638 (84.7)	336 (89.4)	302 (80)	
Missing	14 (1.9)	1 (1)	10 (2.8)	
Cardiovascular Disease				<0.0001
0	297 (39.4)	222 (59)	75 (20)	
1	160 (21.2)	69 (18.4)	91 (24)	
2	125 (16.6)	36 (9.6)	89 (23.6)	
>2	171 (22.7)	49 (13)	122 (32.4)	
Walking disability				<0.0001
Walk without help	502 (66.7)	299 (79.6)	203 (53.8)	
Totally dependant	71 (9.4)	23 (6)	48 (12.7)	
Need assistance	92 (12.2)	19 (5)	73 (19.5)	
Missing	88 (11.7)	35 (9.4)	53 (14)	

➢ 257 starting directly with DHD (dDHD), median age: **70.6 years**
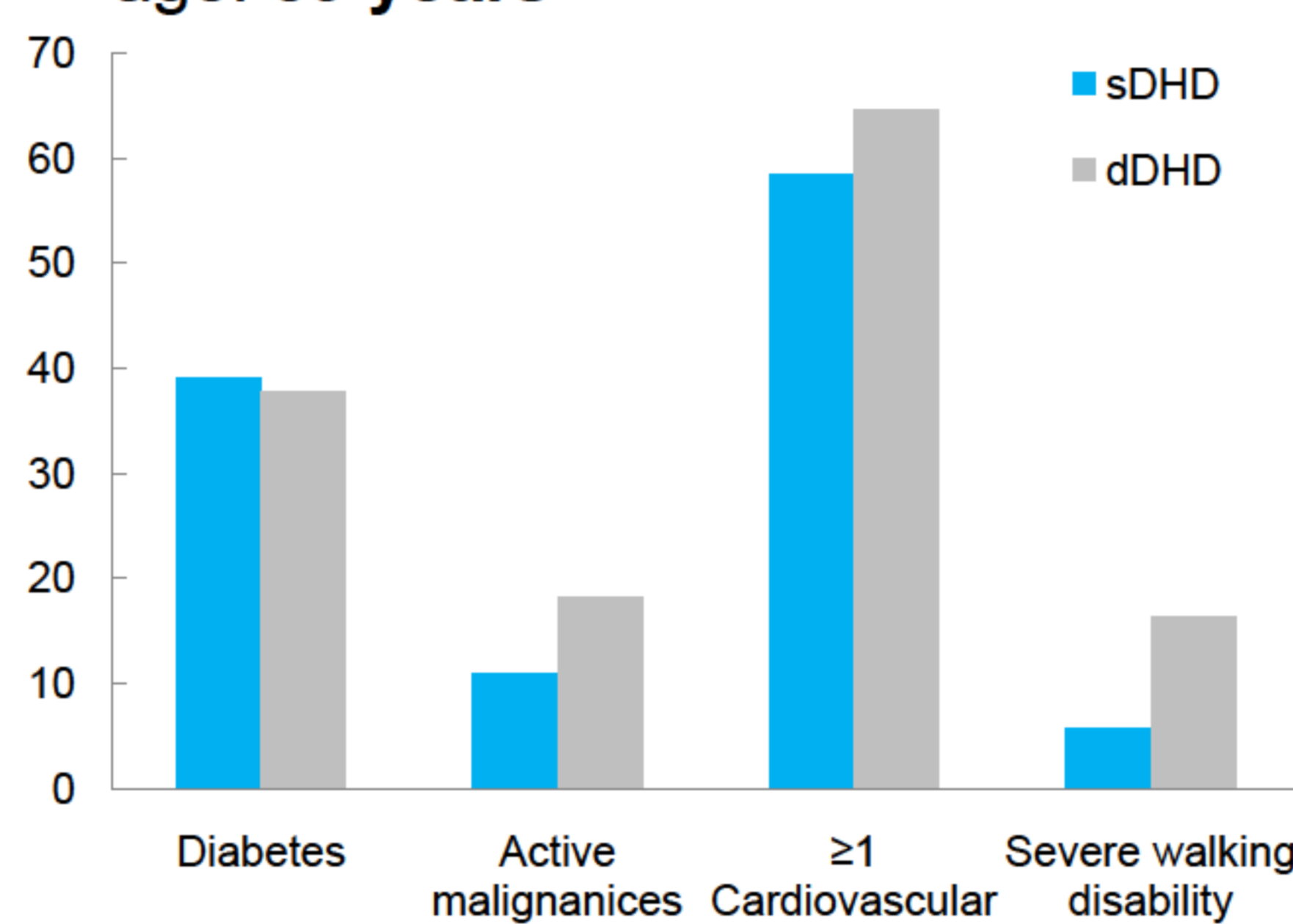➢ 496 starting with other RRT before switching to DHD (sDHD), median age: **59 years**

Figure 1. Histogram of major comorbidities by patients subgroups (%)

Trajectories of sDHD patients, before starting DHD:
- Median duration in RRT before starting DHD: 2 years
- During this period, 27 (5.4%) changed at least one time their dialysis modality: 19 switched from PD to HD; 8 patients from HD to PD.

DHD regimen:
- 30% dialyzed 5 sessions/week
- 70% dialyzed 6 sessions/week
- Sessions 'median duration: 3 hours
- Median duration in DHD: **258 days**

Table 2. DHD characteristics

	Entire population (n=753) n (%)	sDHD patients (n=496) n (%)	dDHD patients (n=257) n (%)	p
DHD modalitites¶				0.009
coDHD	602 (80)	383 (77.2)	219 (85.2)	
cvDHD	151 (20)	113 (22.8)	38 (14.8)	
Autonomy				0.001
Autonomous	134 (18.8)	123 (24.5)	11 (4.3)	
Non-autonomous	619 (82.2)	373 (75.2)	246 (95.7)	
Vascular access				<0.0001
Catheter	192 (25.5)	80 (16.1)	112 (43.6)	
Arterio-venous fistula	378 (50.2)	326 (65.7)	52 (20.2)	
Bypass	9 (1.2)	9 (1.8)	0 (0.0)	
Other	26 (3.5)	6 (1.2)	20 (7.8)	
DHD environment				<0.0001
At home	43 (5.8)	40 (8.1)	3 (1.2)	
In centre	547 (72.6)	309 (62.3)	238 (92.6)	
In satellite unit	163 (21.6)	147 (29.6)	16 (6.2)	

¶ coDHD= conventional DHD (HD); cvDHD= convective DHD (HDF, HF, biofiltration)

Medical Status at the endpoint (31/12/2013):

	Death	DHD	HD<5x/week	PD	Renal graft
<64 years	103 (27.3)	81 (21.5)	76 (20.2)	3 (0.8)	113 (30)
≥64 years	260 (69)	55 (14.6)	55 (14.6)	5 (1.3)	2 (0.5)
dDHD	155 (60.3)	23 (9)	44 (17)	7 (2.7)	28 (11)
sDHD	208 (42)	113 (22.8)	87 (17.5)	1 (0.2)	87 (17.5)
Total	363 (48.3)	136 (18)	131 (17.4)	8 (1)	115 (15.3)

CONCLUSIONS

Our results suggested that in France, DHD is addressed both to old patients with a lot of comorbidities who died in a large number and to young ones in better medical conditions who accessed more to renal transplantation. Moreover, we distinguished two groups of patients according to their history of dialysis: patients directly in DHD, old with several comorbidities and patients starting with other RRT before switching to DHD, younger and in better medical status than firsts. Thanks to our cohort of 753 DHD French patients, we could lead future studies in order to analyze the association between DHD and survival and access to renal transplantation.

References

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L7) Dialysis. Epidemiology, outcome research, health services research.

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