



## Evaluation Of Autonomy in Chronic Hemodialysis, at the Military Hospital of Rabat in Morocco: About 38 Cases

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### Abstract

**Introduction:** The Measure of autonomy loss has required special attention since the sixties: initially with the Katz scale based on activities of daily living (ADL), and the Lawton scale based on activities of domestic life still called instrumental activities of daily living (IADL). It evolved in the eighties with the WHO classification, which served as the basis for developing the SMAF (Functional Autonomy Measurement System) score used in Canada. It has 29 functions divided into 5 areas (ADL, IADL, mobility, communication, mental functions), with a total score varying from 0 to 87. In France, it is the AGGIR grid that is used and includes 06 GIR.

**Objective:** Evaluate autonomy in chronic hemodialysis, to improve its overall management.

**Material and Methods:** Prospective observational study carried out from 12 to 26 December 2019, at the Hemodialysis Center of Mohamed V Military Training Hospital in Rabat, Morocco, which included all chronic hemodialysis of both sexes. The SMAF evaluation grid was completed based on information collected from the patient, his entourage, and completed with the data of his medical file. The grade rating scale used ranged from 0 to 3: 0=Total autonomy, 0.5=Difficulty, 1=Stimulation/Supervision, 2=Partial help, 3=Total dependence. The data processing was done with Microsoft Excel 2013.

**Results:** We had 47% men and 53% women (sex ratio M/F: 0.9); of which 39% were aged 65 and over. The average age was 59 years  $\pm$  18.9. 10% were totally dependent for at least one IADL, and 26% had full autonomy in all areas. 15% used help for at least one IADL; 26% were supervised to manage their budget. 32% had memory difficulties, 40% had motor impairment and 26% mental impairment. 5% of patients aged 65 and over needed help with at least one ADL. 47% of men aged 65 and over needed help with at least one ADL, compared with 53% of women in the same age group. The total SMAF score ranged from 0 to 41.5.

**Discussion:** We chose the SMAF score because it allows for a comprehensive and multidimensional assessment of patient autonomy from other scores. In Quebec, Choinière in 2010 had 6% of patients aged 65 and over who required help for at least one ADL (2); which is consistent with the data from our study. In France, a study done in 2016 by P. Gervais, et al. on 207 residents of an EHPAD in the Dordogne, comparing SMAF and AGGIR scores, found the following results: 24% had a disability for IADL; 22% mental disability, and 24% motor disability. This data is less than ours.

**Conclusion:** Evaluation of autonomy in chronic hemodialysis is essential, for adequate and comprehensive management to improve quality of life. In our series, 26% had total autonomy in all areas. Dialysis itself would decrease autonomy over the years, it's the interest in establishing an autonomy score before dialysis and reassessing it regularly.

**Keywords:** SMAF; Autonomy; Hemodialysis; ADL; IADL

## Abbreviations

ADL: Activity of Daily Living; AGGIR: Autonomy, Gerontology, Iso-Resource Groups; ADL: Activities of Daily Living; BMI: Body Mass Index; EHPAD: Establishment of Accommodation for Dependent Elderly People; F: Female; GIR: Iso-resources Group; M: Male; HDL: High Density Lipoproteins; HMIMV: Mohamed V Military Training Hospital; IADL: Instrumental activity of Daily Living; LVH: Left Ventricular Hypertrophy; LDL: Low Density Lipoproteins; WHO: World Health Organization; PTH: Parathyroid Hormon; SMAF: Functional Autonomy Measurement System; WHO: World Health Organisation

## Introduction

The measure of autonomy loss has required special attention for more than 50 years. Initially in the sixties, the Katz scale in 1963 [1,2], then the Lawton Scale in 1969 [3] based respectively on activities of daily living (ADL) and activities of domestic life, still called: instrumental activities of daily living (IADL) were developed to evaluate autonomy in the elderly with or without chronic diseases. This evaluation has evolved considerably in the eighties, with the WHO classification which served as the basis for the development of the SMAF score (Functional Autonomy Measurement System) used in Canada, and which has 29 functions divided into 5 domains (ADL, IADL, mobility, communication, mental functions). The total score varies from 0 to 87 [4,5]. In France, it is the AGGIR grid who are used and includes 6 GIR [6]: the GIR 1 is the strongest level of autonomy loss, and GIR6 is the lowest.

## Objective of the Study

Evaluate the functionals abilities of chronic hemodialysis patients, with the aim of directing the intake towards adequate health care, in order to improve the quality of life of these patients.

## Material and Methods

It's a prospective observational study made from 12 to 26 December 2019, at the Hemodialysis Center of Mohamed V Military Training Hospital in Rabat. Only chronic hemodialysis of both sexes, followed in our center were included. We collected data: socio-demographic and dialytic (age, sex, seniority on dialysis, initial nephropathy, vascular approach, dialysis dose, residual diuresis, weekly duration of dialysis, blood pressure at connection, appetite); as well as biological (hemoglobin, PTH, lipid balance, albumin, pre albumin, BMI).

Regarding the evaluation of the score, we used the SMAF evaluation grid completed based on information collected either from the patient, his entourage, and/or by observing him during the dialysis session. We used a gradual rating scale ranging from 0 to 3: 0= total autonomy, 0.5= difficulty, 1= stimulation/supervision, 2= partial help, 3= total dependence. All patients were briefed in advance on the study and gave their consent. The data entry and processing were done with the software: Microsoft Word and Excel 2013.

## Results

38 patients were included, either 18 men (47%) and 20 women (53%). The sex M/F was 0.9. 39% were aged 65 and over, and 34% had seniority in hemodialysis between 5 and 10 years. The average age was 59 years  $\pm$  18.9; and diabetic nephropathy was predominant at 26%. All patients had a permanent vascular approach, and did 12 hours of weekly dialysis. 28% of men had an adequate dose of dialysis, against 55% of women. 29% were hypertensive to the branch and 55%. 58% had a hemoglobin level between 10 and 12g/dl and 26% had an LVH 47% had a PTH  $\geq$  to 10 times normal, 8% high LDL, and 53% low HDL. 55% had normal BMI, 97% correct albuminemia and 89% low pre-albumin. 8% kept residual diuresis between 500 ml and 1 liter per day. The total SMAF score ranged from 0 to 41.5 in our sample. 10% of patients were totally dependent on at least one DSA and 26% had complete autonomy in all areas. 15% used help for at least one DSA, and 26% used supervision to manage their budget. 32% had memory problems. 40% had motor impairment and 26% mental impairment. 3% of men aged 65 and over had difficulties with at least one ADL, versus 5% of women. 5% of patients aged 65 and over need help with at least one ADL.

## Discussion

The SMAF score was designed for clinical use in a home support programme, or for the admission and follow-up of clients in geriatric services and in residential accommodation. In our context, we used it to assess the autonomy of our patients in hemodialysis. We chose this score because it allows a more complete and multidimensional assessment of autonomy compared to other scores. It is based on the concept of disabilities described by the WHO in its classification of impairments and disabilities. there is no has not study done yet in the literature, about evaluation of autonomy in this particular population, which constitutes chronic hemodialysis; which justifies of this work. A study done in Quebec by Choinière.,

*et al.* in 2010 illustrates that about 6% of patients aged 65 and over would need help with at least one ADL [7]; which is consistent with the data from our study. Data from a Canadian census carried out in 2006 revealed that: 11% of men and 14% of women aged 65 and over in Quebec often report having difficulty completing ADL; in our country, 3% of men and 5% of women of the same age group presented this profile. In France, the PISE-Dordogne study carried out between 2008 and 2010 found: 20% of patients with motor impairment, 20% of mental impairments, and 50% of those affected by household tasks only [8]; unlike our study which found motor impairment at 40%; and mental injury at 26%. In another French study done in 2016 by P. Gervais., *et al.* on 207 residents of a nursing home in the Dordogne, comparing SMAF and AGGIR scores, the results were as follows: 24% had a disability for DSAs; 22% a mental disability, and 24% a motor disability [9].

## Conclusion

Evaluation of the autonomy of hemodialysis patients is essential for adequate management. In our series, 26% had total autonomy in all areas. Dialysis itself decreases patients' autonomy over the years, hence the interest in establishing an autonomy score as soon as the beginning of dialysis; and reassessing it regularly to know if the patient's profile is stable, improving or worsening.

## Conflicts of Interest

None.

## Contribution of the Authors

All participated in the elaboration of this work. They all read and approved the final and handwritten version.

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