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▶ **To cite this version:**

Anthony Chapron, Typhaine Chopin, Maxime Esvan, Ea Hang-Korng, Frédéric Lioté, et al.. Non-pharmacologic measures for gout management in the prospective GOSPEL cohort physicians' practice and patients' compliance profiles. Joint Bone Spine, Elsevier Masson, 2019, 86 (2), pp.225-231. 10.1016/j.jbspin.2018.06.013 . hal-01862274

HAL Id: hal-01862274

https://hal-univ-rennes1.archives-ouvertes.fr/hal-01862274

Submitted on 13 Sep 2018

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TITLE PAGE

Non-pharmacologic measures for gout management in the prospective GOSPEL cohort: physicians' practice and patients' compliance profiles.

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HIGHLIGHTS

What was previously known:

Non-pharmacological measures (NPM) are recommended to reduce hyperuricemia. Like other urate-lowering therapies these measures are under-used in the management of gout.

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What this research adds relevant for clinicians:

There are three patient profiles in function of their NPM compliance (from 'very good' to 'bad responders'). Some factors (age, metabolic syndrome, excessive alcohol consumption, age of gout) could allow differentiating between profiles and adapting the physicians' approach, recommendations, and follow-up for a more personalized management of patients with gout.

ABSTRACT

Objectives: Gout management includes non-pharmacological measures (NPM). The main objective of this study was to describe the NPM proposed by physicians and their implementation by patients after 3-6 months. The secondary objective was to identify NPM compliance profiles among these patients.

Methods: Ancillary observational study using the GOSPEL French cohort of 1003 patients with gout, based on questionnaires for physicians and patients at inclusion and then after 3-6 months. Patients were included by a representative sample of 398 general practitioners (GP) and 109 private-practice rheumatologists. Modifiable risk factors of hyperuricemia and proposed NPM were compared. Patient compliance profiles were identified by multiple correspondence and hierarchical clustering analysis.

Results: The study included 630 patients: 80.7% were obese or overweight, 51% reported excessive alcohol consumption. Physicians identified fewer modifiable risk factors than their real prevalence in the cohort. Physicians proposed NPM to 57% of patients, particularly diet modifications (46.4%). Increasing physical activity ($p<0.0001$) was the best followed NPM. The physician's influence in the decision of starting NPM was more frequent among GPs' patients ($p=0.01$). Three patients' compliance profiles were identified. "Very good responders" (55.8%) implemented all the proposed NPM. "Good responders" (12.7%) had a more severe disease and followed the proposed NPM, but for alcohol consumption. "Bad responders" (31.5%) didn't modify their life style: these were older patients with a very recent gout diagnosis.

Conclusion: More personalized care about NPM requires adapting the practitioner's approach to patients' compliance profiles, especially elderly patients with recent gout.

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KEYWORDS: gout; non-pharmacological; patient compliance

1. Introduction

Gout is the commonest inflammatory arthritis in adults with a constantly increasing prevalence in Western countries (0.9% to 4.5%) (1)(2)(3). It is caused by the deposition of monosodium urate crystals in tissues, within and around joints, favored by chronic hyperuricemia (>6.0 mg/dL) (4). The cause of hyperuricemia is genetic (mostly defect in renal elimination), and due to a mix of environmental (medications, alcohol, diet), gender (sex hormone effects), and comorbid factors (hypertension, obesity, metabolic syndrome, diabetes). Many of this factors can be modified: reducing consumption of food rich in purines or in fructose (which induces uric acid production), of alcohol and beers, of fructose-sweetened soft drinks, and increase physical activity (5)(6).

Gout management includes the treatment of acute episodes (7), and then the prevention of new attacks and joint destruction by decreasing serum uric acid level with drugs (8). The European League Against Rheumatism (EULAR) recommends and supports the association of pharmacological treatments to decrease serum uric acid level with non-pharmacologic measures (NPM) that act on the modifiable risk factors of hyperuricemia (9)(10)(11). Indeed, body weight reduction and dietary changes can lead to a reduction of the serum uric acid level to about 1.0 mg/dL (12)(13) or a lower risk for gout (14).

The study GOSPEL (*Goutte - Observation des Stratégies de Prise en charge En médecine ambuLatoire;* Gout – Observation of the primary care management strategies) allowed the constitution of a prospective cohort to study the features of patients with gout and their management by general practitioners (GP) and private-practice rheumatologists (RH) in France (15)(16)(17), and to compare with recent 2008 EULAR recommendations for gout management However, NPM within the GOSPEL cohort have not been studied yet.

The main objective of the present study was to describe the NPM proposed by physicians for gout management as well as their implementation by patients of the GOSPEL cohort after 3-6 months. The secondary objective was to identify patients' profiles based on their NPM compliance.

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2- Methods

GOSPEL study

The GOSPEL cohort was constituted between October 2008 and September 2009(15). Its objective was to study the primary care management of gout in France. This was a French national epidemiological, transversal study that included 1003 patients with gout, selected by a representative sample of 398 GP and 109 RH. Each physician included two consecutive patients who consulted for acute or chronic gout. Data were collected in two steps. The first step involved the clinical evaluation (structured questionnaire completed by the physician) and a self-questionnaire (SQ1) filled in by the patients within 15 days after inclusion. Then (step 2), after 3 to 6 months, the second structured questionnaire and self-questionnaire (SQ2) were completed during a new visit or by telephone. The structured questionnaires concerned the patient's sociodemographic characteristics, comorbidities and usual treatments, gout history, available clinical laboratory data, modifiable risk factors of hyperuricemia, current gout management, compliance and gout clinical course. The self-questionnaires concerned the patient's lifestyle and the NPM introduced after the first visit.

GOSPEL data used for this study

For this ancillary observational study, data on the modifiable risk factors of hyperuricemia identified by the physicians and the NPM proposed to each patient were included (structured questionnaires). These data were coded in categories after text analysis and were stored in the GOSPEL database. Other relevant data extracted from the structured questionnaires were: sex, age, body mass index (BMI), reason for the consultation (acute gout, chronic gout flare, other), history of the gout disease, presence of comorbidities, modifications of the usual treatment (particularly, stopping a diuretic treatment).

The data extracted from the patients' SQ1 and SQ2 were: practice of a physical activity and time dedicated to this activity per week; dietary changes; quantification of alcohol consumption (in g/day) and changes after the diagnosis of gout; consumption of alcohol-free beer and sweetened soft drinks; and consumption of food rich in purines (9). Excessive alcohol consumption was defined as more than three glasses of alcohol per day for men and two glasses of alcohol per day for women (18).

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In the case of modification of a lifestyle feature, the patient estimated the physician's influence in this decision.

Analyses

Qualitative variables were described as numbers and percentages; quantitative variables as numbers, means and standard deviation. For group comparisons (RH vs GP), the chi square and Fisher's exact tests were used for qualitative variables, and the Student's *t* test for quantitative variables. Paired tests (Student's *t* test for quantitative variables, McNemar's test for qualitative variables) allowed comparing the number of NPM proposed at inclusion and the number still followed by the patients after 3-6 months. Descriptive statistics were performed using SAS, version 9.4. A p value <0.05 was considered as significant.

Patient profiles in function of their NPM compliance were determined by multiple correspondence analysis (MCA), followed by hierarchical clustering analysis (HCA). HCA grouping is done by "minimum leaps" bringing together 2 to 2 patients whose data are closest to form classes (19). Analysis were performed using FactoMineR package for R. This analysis included only patients without missing data. The MCA was based on the following eight NPM, defined as "active variables": increasing physical activity, reducing the consumption of alcohol, soft drinks, offal, red meat, game meat and charcuterie, and mushrooms, and increasing the consumption of dairy products. Then, the HCA was performed to group patients with similar profiles. These clusters were described by taking into account the patients' sociodemographic and clinical data.

Ethics and regulatory considerations

The GOSPEL project was approved by the *Commission Nationale Informatique et Libertés* (French data protection authority – number CNIL2007) and the physicians' financial compensation was accepted by the Conseil National de l'Ordre des Médecins (French Board of Physicians). Patient's written informed consent was obtained to be involved in GOSPEL cohort and to keeping data for scientific use.

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Role of the funding source

The sponsors had no role in the decision to submit this manuscript.

3- results

Patients' characteristics

Among the 1003 patients included in the GOSPEL study, only 630 were selected for this study on the basis of the availability of all four (inclusion and follow-up) questionnaires [Appendix A, fig; S1; See the supplementary material associated with this article online]. This population included mainly men (89.0%) and had a mean age of 62.9 ± 11.3 years, without significant difference between patients seen by a GP or by a RH (**Table 1**). The mean BMI was 28.5 ± 4.3 kg/m², and 51.1% of patients were overweight (BMI ≥25kg/m²) and 29.6% obese (BMI ≥30kg/m²). Dyslipidemia and diabetes were more frequent among patients with gout followed by a GP compared with those seen by a RH ((p=0.002 and p=0.023, respectively). Conversely, patients with a diagnosis of chronic kidney disease were more numerous in the RH group (p=0.005). Overall, patients were mostly sedentary (76.5% of them answered «no» to the question concerning the practice of a sports activity). Among the 148 patients who practiced a physical activity, 23.5% quantified this activity to less than 1 hour per week, and 36.4% between 1 and 2 hours per week. Excessive alcohol consumption concerned 24.2% of women and 54.1% of men.

Modifiable risk factors of hyperuricemia and NPM proposed by physicians

Physicians identified at least one modifiable risk factor of hyperuricemia in 46.3% of patients (45.8% of all patients seen by a GP and 48.3% of all patients seen by a RH) **(Table 2).**

Physicians proposed to 57% of patients to put in place at least one NPM. The NPM types recommended by GP and RH were comparable, but for the suggestion to increase physical activity (more frequently proposed by RH; p=0.02), and to change diet and decrease purine intake (more frequently suggested by GP; p=0.005 and p=0.008, respectively). Specifically, dieting was proposed to 26.8% and 14.3% of patients with overweight (BMI ≥25 kg/m^2) by GP and RH, respectively.

Physicians identified fewer risk factors than their real prevalence within the cohort. For example, 80.7%

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of patients were overweight or obese, but this risk factor was identified only in 5.3% of patients. Moreover, they suggested dieting only to 22.2% of all patients. Alcohol consumption was excessive in 51% of patients but was identified as a risk factor by physicians in 16.3% of them, and only 8.6% of patients received the recommendation of decreasing its intake. The measure "reducing sweetened soft drinks" was proposed to 0.4% of patients, although 28.9% reported their consumption. Conversely, the consumption of food rich in purines was better monitored. It was identified by physicians in 8.1% of patients and was the objective of a NPM in 8.4% of the cases.

Non-pharmacological measures targeted by patients and their compliance

At inclusion (SQ1) and then 3-6 months later (SQ2), the priority measure targeted by patients was reducing the consumption of offal/game meat/charcuterie **(Table 3)**. Patients said that they improved their compliance for several targeted NPM: diet ($p=0.03$), physical activity increase ($p<0.0001$), and alcohol consumption reduction ($p=0.001$). The physician's influence in the decision of starting a diet was described as "full" by 51% of patients, "partial" by 44.2% and «non-existent» by 4.8% of patients. The "full" influence was more frequent among patients followed by a GP ($p=0.01$).

Patient profiles in function of their NPM compliance

The hierarchical clustering analysis concerned 387 patients without missing data on the 8 NPM **(Figure 1).** These analyses allowed the identification of three clusters or patient profiles (**Table 4 and Appendix A, Fig. S2**). Cluster 1 included patients considered as "very good responders" (55.8%): they followed most of the proposed NPM, with the exception of increasing the consumption of dairy products. Cluster 2 included patients defined as "good responders" (12.7%) who adopted all proposed NPM, including increasing the consumption of dairy products, but who were less disposed to reduce the alcohol intake. Cluster 3 grouped patients considered as "bad responders" (31.5%) who tended not to modify their lifestyle.

"Very good responders" (cluster 1) had more frequently diabetes and dyslipidemia, compared with "bad responders" (cluster 3) **(Table 5).** "Good responders" (cluster 2) seemed to be more affected by gout compared with the other two profiles: higher number of attacks per year, more tophi, more consequences,

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and more consultations. “Bad responders” (cluster 3) were older and with a more recent disease. In this cluster, the number of patients who did not receive any lifestyle recommendation by their doctor was higher than in the other clusters.

4- Discussion

A total of 57% of physicians proposed at least one NPM for gout management but physicians identified fewer modifiable risk factors of hyperuricemia than those actually present in their patients. For example, 80.7% of patients were overweight or obese (Table 1; compared with 13.1% of the general population (20)), but this risk factor was identified only in 5.3% of patients (Table 2). These are well-known modifiable risk factors of hyperuricemia that were nevertheless under-reported by both GP and RH. On the other hand, soft drink consumption could have been overlooked because the information about their role in gout is recent (21) and was not included in the EULAR recommendations for 2006. Conversely, the consumption of food rich in purines (classical knowledge) was better monitored, possibly because this is among the gout causes classically taught in medical schools.

Physicians identified fewer modifiable risk factors as previously reported (17) but more precisely analyzed in our study. They implemented very few NPM or have made specific suggestions to their patients. The inadequate search of modifiable risk factors and consequently the insufficient number/limited scope of the proposed NPM are not specific to France. In the study by Roddy et al, only half of the patients reported having received recommendations concerning alcohol consumption, weight loss or diet adaptation (22). Similarly, only 17.4% of the 321 patients with gout included in an Australian study declared to have benefitted from suggestions concerning their lifestyle by their physician (23). Altogether, data from our study highlight the physicians’ poor knowledge (both GP and RH) about these recommendations.

Interestingly, patients followed NPM according to three profiles, classified from “very good” to “bad” responders. Patients mainly targeted NPM concerning the consumption of alcohol and of some foods rich in purines (offal, game meat, cold meats and delicatessen), which are commonly known by the

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general population. Overall, patients targeted more often the physical activity increase and the diet implementation, which are measures routinely suggested for chronic diseases. Nevertheless, half of the patients did less than two hours of physical activity per week, which is below the recommendation of 150 minutes of moderate intensity activity per week (24). The compliance for other NPM remained stable between inclusion and follow-up at 6 months, suggesting that patients can implement them on the long-term.

For the first time, we have identified three patient profiles that could help physicians to adapt their explanations/recommendations in function of the patient typology. We did not find any specific sociodemographic feature for the "very good responders" who followed most of NPM (55.8%). As this group included more patients with diabetes and dyslipidemia than the "bad responders" group, we could hypothesize that they are more aware of the need of lifestyle changes. There are obvious differences in terms of body phenotypes between French and US populations: variations in terms of prevalence of diabetes, hypertension and obesity are found in both directions(25)(26). These variations could make it possible to discuss the transposition of our results to each country, however the impact on the global relevance could be discussed for specific conclusions, but not for the overall patient's and physician's behaviors. Among "good responders", the symptom intensity and the gout professional, social and psychological consequences could have motivated their lifestyle change to better control their disease. Nevertheless, "good responders" were less keen to decrease their alcohol consumption than the "very good responders", suggesting the presence of dependence, particularly because the other NPM were well accepted and followed. It should be noted that in the GOSPEL cohort, excessive alcohol consumption was defined according to French recommendations as more than three glasses of alcohol per day for men and two glasses of alcohol per day for women while it is two and one, respectively, in United States. The prevalence of heavy drinking in the cohort would therefore be higher according to the definition in other countries. NPM implementation was more difficult among "bad responders". Physicians should monitor better these patients and devote more time to explain the therapeutic path and create a therapeutic partnership.

The strengths and limits of the GOSPEL cohort have been described previously (15). This ancillary study described the physicians' practices and NPM implementation and compliance by patients.

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Nevertheless, it was an observational study and, therefore, did not allow demonstrating links between the physician's action (explanations/recommendations of some NPM) and the patients' lifestyle modifications. Moreover, data on the recommended NPM were collected by using open-ended questions that were then coded. This could have led to a lower precision or loss of information. With the exception of alcohol, the other NPM were not evaluated quantitatively. Therefore, the patients' responses and their coding are sources of bias. In addition, we could hypothesize that the patients who filled in the two questionnaires were potentially more involved in gout management than patients who were lost to follow-up or with missing data. Three clusters were identified for this study. Beyond three, the grouping did not seem homogeneous enough (long aggregation distances, **Fig S2**). Clusters could have been set up at the lower level, which seemed less relevant for carrying out a typology of homogeneous patients with an objective of interest results for practice. An interventional study with a control group and a longer follow-up could be useful to assess the effect of implementing NPM by physicians and the long-term maintenance of lifestyle changes by patients. Moreover, it could be useful also to assess NPM effect on the control of serum uric acid level because only few studies on small populations are currently available (27).

For the practice, it could be summarized as: propose more NPM and personalize the management of gout. A better identification of risk factors is a key step during the consultation that should allow physicians to propose more NPM. Particularly, we recommend the systematic calculation of the BMI during a gout consultation as well as questioning about alcohol and high fructose-content soft drink consumption because of their association with hyperuricemia (28). A better knowledge of hyperuricemia physiopathology should facilitate the identification and memorization of the modifiable risk factors (29), and consequently the recommendation of adapted NPM.

The identification of three NPM compliance profiles could modify the physicians' practice towards a more personalized management of patients with gout. For example, physicians should monitor better "bad responders" by devoting more time to explain the therapeutic path and create a therapeutic partnership.

Ethics approval and consent to participate: The GOSPEL project was approved by the

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Commission Nationale Informatique et Libertés (French data protection act) and the physicians' financial compensation was accepted by the Conseil National de l'Ordre des Médecins (French order of physicians).

Consent for publication: Not applicable.

Availability of data and materials: The data that support the findings of this study are available from the corresponding author on request.

Competing interests:
A. Chapron, T. Chopin, M. Esvan, E Hang-Korgn, P Guggenbuhl: declare that it has no conflict of interest in relation to this publication.
F. Lioté: Consultancy and expert appraisal fees, participation in CME/CPD sessions on gout: Astra-Zeneca, Grunenthal, Ipsen Pharma, Menarini France and Global, Mayoly-Spindler, Novartis France, Novartis Global; Unrestricted grants were awarded by the following pharmaceutical companies for the venues of eight European Annual Workshops on gout and crystal-related diseases in humans (convenors: Prof. Frédéric Lioté and Prof. Alexander So, Lausanne, Switzerland), held in Paris, France, March 2009-2017: Ipsen Pharma, Menarini France and International, Mayoly-Spindler, Novartis France and Global, SOBI France and International, Savient, Astra-Zeneca, Grunenthal corporate and Ardea.

Funding: The GOSPEL project was initially funded thanks to institutional support from LGV, a former Mayoly-Spindler company, and Ipsen Pharma. Database cleaning was supported by the "*Association PTD – Cristaux et Cartilage",* Hôpital Lariboisière, Paris.

Authors' contributions: AC TC FL and PG designed this ancillary study and drafted the manuscript. FL, EHK, and PG co-designed the initial study GOSPEL. ME co-drafted the manuscript and made the statistical analysis. All authors read and approved the final manuscript.

Acknowledgements: We are grateful to Dr Marie-Christine Andro-Delestrain (Mayoly-Spindler), Prof Alain Saraux, Brest, Dr Sabine Lanz (Laboratoires Mayoly-Spindler) and Dr Charles Lambert (Ipsen Pharma) for their support and contribution to the project; Dr Pierre Chiarelli and Mr Samy Sahbane (Vivactis Etudes Cliniques, Courbevoie) for preparing, implementing, and conducting the study quality controls; Mrs Catherine Delva and Sylvie Lancrenon for preparing preliminary statistical analyses; the general practitioners and

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rheumatologists who contributed to data collection; and the patients who agreed to participate in the study.

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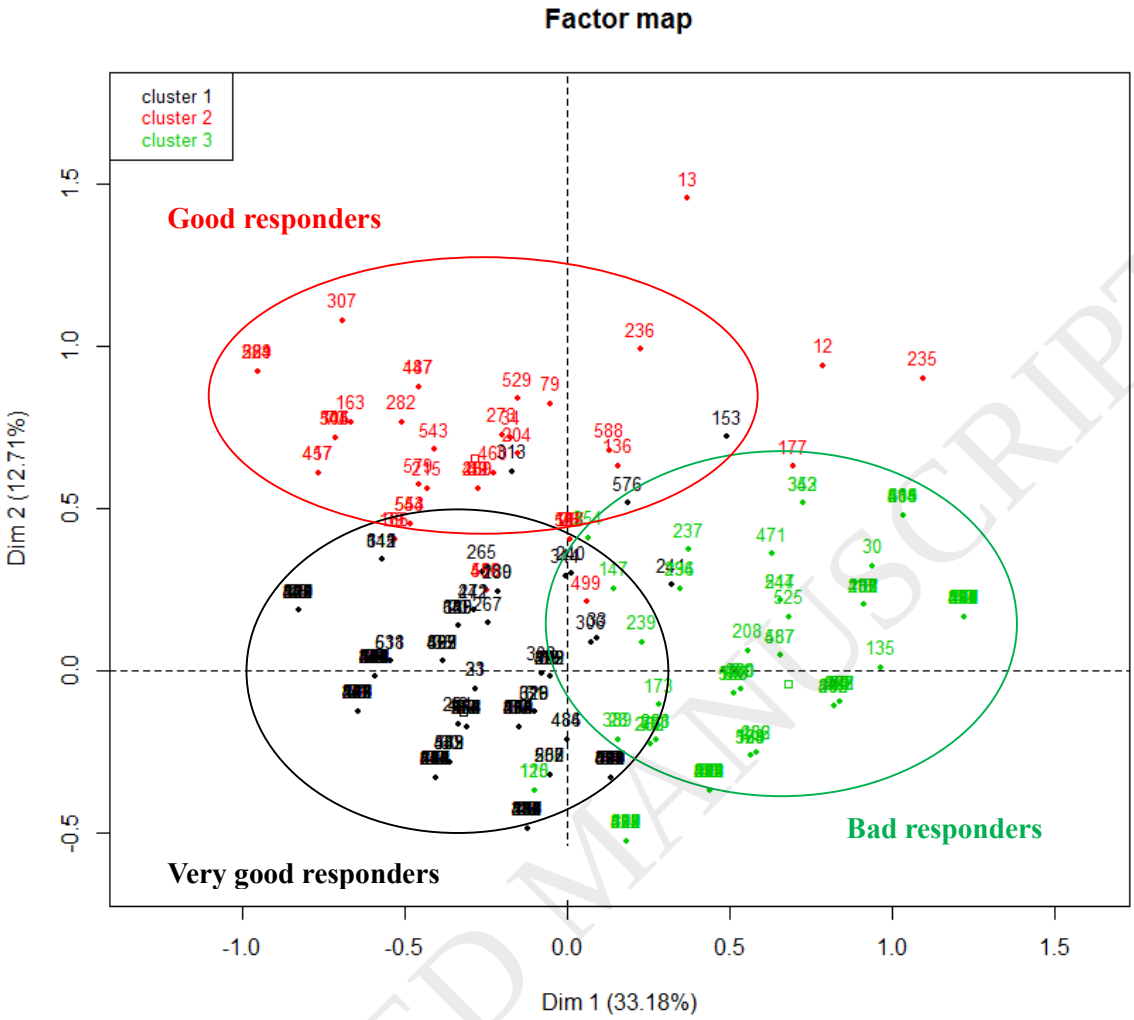
Figure 1. Patients' distribution in the three clusters (n=387).



Legend:
cluster 1 (black): very good responders
cluster 2 (red): good responders
cluster 3 (green): bad responders

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Table 1: Characteristics of the included patients

	n	%
Sociodemographic data (n = 630)		
Sex		
Men	561	89.0
Women	69	11.0
Age, years (mean ± SD)	62.9 ± 11.3	
BMI, kg/m² (mean ± SD)	28.5 ± 4.3	
BMI		
< 20	1	0.2
Normal [20-25[	120	19.2
Overweight [25-30[	320	51.1
Obesity ≥ 30	185	29.6
Gout history (n = 613)		
Gout duration, years (mean ± SD)	7.8 ± 8.1	
Number of attacks per year (mean ± SD)	2 ± 1.6	
Serum uric acid level, mg/dL (mean ± SD) at self-quest 1 (n=524) at self-quest 2 (n=301)	 7.0 ± 1.6 6.5 ± 2.5	
Urate-lowering therapy (allopurinol) at self-quest 1 at self-quest 2	 71 471	
Comorbidity (n = 627)		
Hypertension	339	54.1
Dyslipidemia	293	47.0
Diabetes	94	15.1
Coronary disease	52	8.4
Chronic kidney disease*	31	5.0
Cerebrovascular accident	22	3.5
Lifestyle (n = 629)		
Physical activity	148	23.5
Consumption of sugary/soft drinks	181	28.9
Consumption of alcohol-free beer	25	4.0
Alcohol total, g/day (mean ± SD)	31.9 ± 31.3	
Beer, g/day (mean ± SD)	5.7 ± 11.3	

SD: standard deviation; BMI: body mass index; * defined by a creatinine clearance <60ml/min calculated according to the Cockroft-Gault formula

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Table 2: Modifiable risk factors of hyperuricemia identified by the physicians and targeted NPM

Modifiable risk factors identified by the physician (n=620)	n	%		NPM targeted by the physician (n=599, open-ended questions)	n	%
Rich food	169	27.3		Lifestyle/diet changes	294	49.1
Alcohol consumption	101	16.3		Diet changes	278	46.4
Purine consumption	50	8.1		Weight-loss diet	129	22.2
Diuretics	45	7.3		Alcohol reduction	49	8.6
Overweight	33	5.3		Physical activity	36	6.3
Absence of physical activity	7	1.1		Stopping diuretics[$]	23	3.9
Beer consumption	5	0.8		Beer reduction	5	0.9
Soft drink consumption	1	0.2		Soft drink reduction	2	0.4

[$] if used for other indication than heart failure

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Table 3: Measures put in place at inclusion and followed by the patients after 3 - 6 months (n = 618) – patients responses (yes/no)

Measure at inclusion, n (%)	SQ1	SQ2	p
Diet (followed or planned)	268 (43.0)	296 (47.9)	p = 0.030
Increase of physical activity	30 (5.1)	150 (25.4)	p < 0.0001*
Reduced consumption of			
Offal	315 (67.7)	309 (66.5)	p = 0.59
Game meat/Charcuterie	336 (60.6)	368 (66.4)	p = 0.017*
Alcohol	285 (51.6)	309 (56.0)	p = 0.09
Alcohol consumption, g/day (mean ± SD)	31.9 ± 31.3	26.1 ± 31.3	p = 0.001*
Red meat	209 (34.6)	221 (36.5)	p = 0.38
Mushrooms	53 (10.5)	89 (17.6)	p = 0.0001*
Increased consumption of			
Dairy products	43 (7.3)	45 (7.6)	p = 0.78

SQ: self-questionnaire; SD: standard deviation, * : p< 0.05.

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Table 4. Description of patient clusters relative to the eight NPM compliance (n = 387)

NPM, n (%)	Cluster 1 "Very good responders" (n = 216)	Cluster 2 "Good responders" (n = 49)	Cluster 3 "Bad responders" (n = 122)
Increased physical activity	94 (43.5)	20 (40.8)	15 (12.3)
Reduced consumption of			
Offal	209 (96.8)	45 (91.8)	51 (41.8)
Alcohol	203 (94.0)	40 (81.6)	30 (24.6)
Sugary/soft drinks	128 (59.3)	26 (53.1)	13 (10.7)
Mushrooms	69 (31.9)	16 (32.7)	1 (0.8)
Game meat/Charcuterie	210 (97.2)	42 (85.7)	55 (45.1)
Red meat	143 (66.2)	26 (53.1)	33 (27.0)
Increased consumption of			
Dairy products	0 (0.0)	49 (100.0)	0 (0.0)

NPM: non-pharmacological measures.

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Table 5. Description of the clusters in function of the patients' characteristics (n=387)

	Cluster 1 (n =216) "Very good responders"	Cluster 2 (n = 49) "Good responders"	Cluster 3 (n = 122) "Bad responders"
Demographic characteristics: % (n)			
Men	94.0 (203)	93.9 (46)	86.9 (106)
Women	6.0 (13)	6.1 (3)	13.1 (16)
Age:			
<35 years	0.5 (1)	4.1 (2)	0
[35 - 45[	6.5 (14)	4.1 (2)	3.3 (4)
[45 - 55[	20.4 (44)	20.4 (10)	18.9 (23)
[55 - 65[	37.5 (81)	40.8 (20)	36.1 (44)
[65 - 75[	23.1 (50)	22.4 (11)	21.3 (26)
≥75 years	12.0 (26)	8.2 (4)	20.5 (25)
Comorbidity and lifestyle: % (n)			
Diabetes	15 (32)	20.4 (10)	11.7 (14)
Dyslipidemia	47.9 (103)	57.1 (28)	39.2 (47)
Diet (followed or planned)	56.7 (122)	51.0 (25)	26.2 (32)
Arterial hypertension	52.1 (112)	44.9 (22)	48.8 (59)
Chronic kidney disease*	3.8 (8)	2.1 (1)	1.7 (2)
Total alcohol (g/day):			
0 g/day	9.3 (20)	8.2 (4)	18.9 (23)
> 100 g/day	0.9 (2)	2.0 (1)	2.5 (3)
]0 – 20]	26.9 (58)	20.4 (10)	23.0 (28)
]20 – 40]	32.4 (70)	26.5 (13)	27.1 (33)
]40 – 60]	21.3 (46)	22.4 (11)	20.5 (25)
]60 – 80]	6.0 (13)	14.3 (7)	4.9 (6)
]80 – 100]	3.2 (7)	6.1 (3)	3.2 (4)
Excessive alcohol consumption	54.9 (118)	259.2 (9)	53.3 (65)
Gout:			
Gout duration, years (mean±SD)	7.6 ± 7.0	7.6 ± 6.3	6.8 ± 7.4
Number of attacks/year (mean±SD)	2 ± 1.3	2.7 ± 2.4	1.8 ± 1.4
Presence of tophi, % (n)	14.4 (31)	26.5 (13)	14.0 (17)
Serum uric acid, mg/dL (mean±SD)	6.1 ± 1.9	6.7 ± 1.9	6.7 ± 2.9
Urate-lowering therapy: % (n)	183 (84.7)	40 (81.6)	92 (75.4)
Gout as reason for the consultation, % (n)	70.4 (152)	77.6 (38)	59.0 (72)
Consequences (VAS, mean±SD):			
At work	41.7 ± 28.1	48.1 ± 29.6	36.5 ± 25.9
On social relationships	32.3 ± 25.8	37.1 ± 30.5	24.6 ± 21.5
On mood	35.3 ± 27.0	42.3 ± 30.3	28 ± 25.1
NPM proposed by the physician:			
At least one NPM proposed, %(n)	58.9 (122)	69.4 (34)	44.8 (52)
Number of NPM proposed by the physician, (mean±SD)	2.2 ± 2.1	2.3 ± 2	1.5 ± 1.9

SD: standard deviation; VAS: visual analogue scale, score between 0 and 100; NPM: non-pharmacological measures; * defined by a creatinine clearance <60ml/min calculated according to the Cockroft-Gault formula