

Gouty arthropathy in the rheumatology department at the University Hospital Center of Brazzaville: About 100 cases

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Abstract

Objective: Describe the characteristics of gouty arthropathy at the University Hospital Center of Brazzaville.

Patients and Methods: This was a descriptive and cross-sectional study with a retrospective recruitment method, conducted from March 1, 2002 to March 1, 2012, i.e. Ten (10) years. It was based on the analysis of the medical files of patients seen in hospitalization in the Rheumatology department of the Brazzaville University Hospital. On the basis of anamnestic, clinical, paraclinical, therapeutic and evolutionary data, we searched for elements in favor of gout. The diagnosis of gout was made on the basis of the ACR1977 criteria.

Results: There were 100 cases of gout with a male predominance in 87 cases (87%) and a sex ratio of 6.69. The average age was 59.51 years, with extremes of 37 and 94 years. 56% of our patients were overweight, 33% obese and 11% had a normal BMI. The average duration of progression of gout before consultation was 4.9 years with extremes of 1 and 31 years. The big toe was the most common site of arthritis (62%). Polyarthrititis was found in 40% of cases, oligoarthrititis 34 % and monoarthrititis in 26% of cases. Tophus were found in 17 patients (17%), of whom 5% had ulcerated tophi. Swelling of soft tissues WAS the most common radiographic anomaly found in 21 cases (21%), followed by narrowing of the joint space 14 cases (14%), erosions and geodes 11 cases (11%).

Conclusion: gouty arthropathy retains its place in the Rheumatology department of Brazzaville University Hospital with a slight increase in frequency. Its epidemiological and clinical profile is almost the same in all parts of the world.

Keywords: Gouty arthropathy; Rheumatology department; Brazzaville University Hospital

1. Introduction

Monosodium urate crystals. It is characterized by recurrent episodes of acute arthritis affecting one or more joints. After several years and in the absence of appropriate treatment, chronic tophaceous gout develops. Gout is a common pathology, affecting at least 1% of the population. Its prevalence is increasing in many industrialized countries [1-5], but also in emerging countries [6,7]. Among the many factors that can explain this increase, changes in lifestyle and in particular dietary habits are probably the most important [8]. The prevalence of gout increases with age, which is undoubtedly explained by the slow formation of lens deposits. Gout predominates in frequency in men, 4 to 10 times more often affected than women [9,10]. It is the most common cause of inflammatory arthritis in men over 40 years of age [11]. On the other hand, in our African or Congolese context, gout remains a condition which has been the subject

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of several studies [12-14], but insufficient unlike in the West where the latter gives rise to numerous works, particularly in fundamental research [15, 16]. The aim of our study was to describe the characteristics of gouty arthropathy at the University Hospital Center of Brazzaville.

2. Material and Methods

This is a descriptive, cross-sectional, retrospective study based on the analysis of patient files, conducted from March 1 · 2002 to March 1 · 2012, i.e. 10 years, in the Rheumatology department of the Brazzaville University Hospital, Congo. . We collected the files of patients hospitalized during the study period and those hospitalized for gout meeting the criteria of Rome 1963 and/or New York 1966 and/or the ACR 1977[17] were retained. Excluded were incomplete medical files of patients, medical files of patients admitted for other rheumatic conditions including microcrystalline arthropathy other than gout, septic arthritis, inflammatory and degenerative pathologies. We obtained approval from the ethics committee to carry out this study. The data collected from the patients' medical records were transcribed onto a pre-established survey form. This made it possible to collect sociodemographic characteristics (frequency, age, sex, socio-professional status, body mass index) and to research, on the basis of anamnestic, clinical, biological and imaging data (Radiography standard and ultrasound), signs in favor of gout:

- Clinics: history, reason for consultation, average diagnostic time, factors triggering the acute gout attack and comorbidities. The clinical examination specified the sites of arthritis, tophi, and deformations;
- Biologically, joint puncture was performed each time if possible and the synovial fluid was of the inflammatory type if it contained more than 2000 leukocytes/mm³. The detection of monosodium sodium urate crystals in the analysis of joint or tophi fluid was sought. An increase in uric acid greater than 70mg/l in men and 60mg/l in women. The presence of a biological inflammatory syndrome with acceleration of the sedimentation rate (normal less than 20 mm in the first hour), increase in C-reactive protein (normal less than 6 mg/l), leukocytosis with polymorphonuclear neutrophils (normal between 4000 and 10,000 white blood cells per millimeter of blood and 1800-7000 polynuclear neutrophils per cubic millimeter) and thrombocytosis (normal 150,000 and 400,000 cells per cubic millimeter);
- The morphological investigation consisted of research on standard radiography of typical drop lesions of destruction (epiphyseal geodes or notches intraosseous or on the lateral faces of the epiphysis (Halberd image), voluminous erosions of the first metatarsal head; pinching of the joint space and constructions (apposition porosity in the form of an image of a spicule overhanging the notch, Osteoarthritis with a particular location at the tarsus and the MTP with significant osteophytosis: ruffled foot appearance);
- Therapeutic data: favorable evolution under symptomatic treatment (colchicine and non-steroidal anti-inflammatory drugs) and urate-lowering agents based on xanthine oxidase inhibitors (allopurinol).
- SPSS 22 software was used to analyze the data.

3. Results

During the study period 4471 patients were hospitalized for various pathologies in the Rheumatology Department. Among these, 100 documented cases of gouty arthropathy are the subject of this study, representing a hospital frequency of 2.23% of cases. Including 87 (87%) males and 13 (13%) females. With a sex ratio of 6.69. The average age was 59.51 years with extremes of 37 and 94 years. The distribution by age group and sex is summarized in Figure 1. The majority of our patients worked in the public sector (51%), followed by the informal sector (37%), the private sector 9 cases and the unemployed. employment 3 cases. 56% of our patients were overweight, 33% were obese and 11% had a normal BMI. Half of our patients (50%) were regular consumers, among whom 10% were considered alcoholics according to the WHO (more than 30 g per day in men, more than 20 g per day in women). 51 patients had a history, including arterial hypertension in 37 patients, diabetes mellitus in 9 cases, 2 cases of cancer, 2 cases of surgery and 1 case of urolithiasis. A family history of gout was found in 28 patients (28%). The average duration of progression of gout before consultation was 4.9 years with extremes of 1 and 31 years. The big toe was the most common site of arthritis (62%). The sites of arthritis are represented by Figure 2. The intensity of the pain evaluated on the visual analog scale was hyperalgesic in 82% of cases, very intense in 17% of cases and intense in 1% of cases. Polyarthritis was found in 40% of cases, oligoarthritis 34 % and monoarthritis in 26% of cases. Tophus were found in 17 patients (17%), of whom 5% had ulcerated tophi. The seats of the tophi were: the olecranon in 11 cases (64.70%); the toe in 6 cases (35.29%); the wrist in 5 cases (29.41%); the fingers in 5 cases (29.41%) and the Achilles tendon in 4 cases (23.52%) and the pinna in 3 cases (17.64%). Biologically, 53 patients had arthritis with joint effusion at the knee. Macroscopically, the joint fluid had a citrine appearance in 81.5% of cases and cloudy in 18.5% of cases. On microscopy the cellularity was less than 2000 elements per mm³ in 60.4% of cases, between 2000 and 10000 in 29.2%, between 10000 and 15000 in 6.3% and greater than 15000 in 4.1% of cases. case. Sodium urate crystals were detected in 95.8% of cases.

Radiographically, it was normal in 40 cases (40%) and pathological in 60 cases (table 1). Swelling of soft tissues was the most common anomaly found in 21 cases (21%), followed by narrowing of the joint space in 14 cases (14%) (Figure 3a), erosions and geodes in 11 cases (11%). (Figure 3b). In our series, ultrasound was prescribed and performed in 12 patients not for diagnostic purposes but rather to guide the practitioner in locating joint effusions. The blood count revealed hyperleukocytosis in 63% of cases associated with an acceleration of the sedimentation rate in 72% of cases and an increase in C-reactive protein in 75% of cases. Renal function was impaired in 12 patients with serum creatinine between 15 and 20 mg/l in 7 cases and between 20 and 50 mg/l in 5 cases. Therapeutically, symptomatic treatment was prescribed in all patients. Colchicine in 100% of cases, non-steroidal anti-inflammatory drugs in 80% of cases. Under colchicine, the adverse effects observed were: abdominal pain (17.4%); pruritus (6%) and diarrhea in 4.4% of cases. Basic treatment with allopurinol was prescribed in all patients as well as a urate-lowering diet. The average length of hospitalization was 11 days. It was less than 7 days in 20 cases, between 7 and 15 days in 43 cases and between 16 and 20 days in 27 cases. In 60% of cases, medication was taken regularly, however it was irregular in 85% of cases. Annual follow-up was twice in 47% of cases, 4 times in 41% of cases, 1 time in 7% and 6 times in 1% of cases. We observed 4 patients who were lost to follow-up.

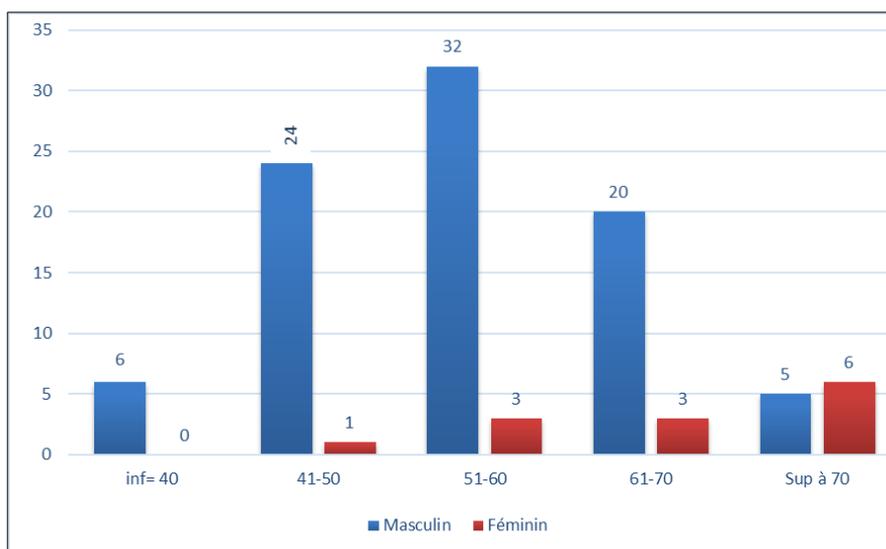


Figure 1 Distribution of patients by age group and sex

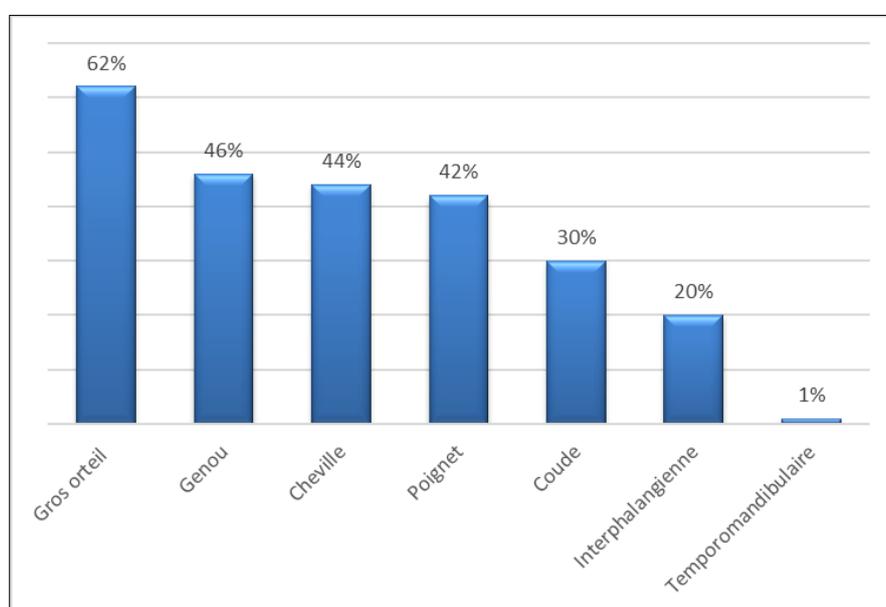


Figure 2 Sites of arthritis

Table 1 Radiographic abnormalities

X-ray images	N	%
No anomalies	40	40
Swelling of soft tissues	21	21
Joint space narrowing	14	14
Erosions + geodes	11	11
Epiphyseal demineralization	7	7
Intraarticular calcification	7	7
Total	100	100

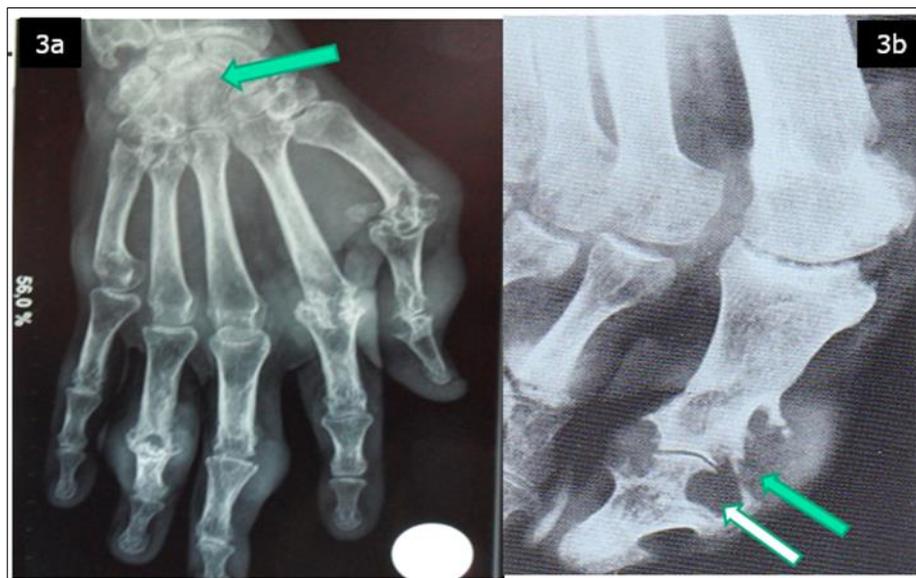


Figure 3 X-ray of the right hand (Fig3a) showing narrowing of the joint space of the carpal bones (Green arrow); X-ray of the right forefoot from the front (fig 3b) showing a geode or epiphyseal notch (white arrow) and a Halberd image (green arrow) image from the Rheumatology Department of Brazzaville University Hospital

4. Discussion

In ten (10) years, we have collected 100 cases of gout patients. This represented 2.23% of all patients admitted to hospital. Our results are superior to those reported by Djaha et al in Abidjon 1.6% [18] and by Bardin et al who noted a frequency of 1 to 1.5% in France [19]. Throughout the world, several prevalences have been reported both in the general population and in hospital series [20,21]. Gout is a ubiquitous pathology. It was wrongly considered a disease of wealthy countries because of its links to overeating. It has similarities in frequency in other parts of the world while it is extremely common in the aboriginal populations of the Pacific and South Asia. On this aspect we think that genetics would have its share of responsibility [20]. In our series the frequency of gout increases with age as in several other studies carried out in Africa and around the world [20,22]. The average age of patients in our series is 59.51 years. In the study conducted in 1991 at CHUB, the youngest patient was 28 years old while the oldest was 71 years old. The average age was 51 years old. This shift in the age curve of gouty subjects to the right, although the average age remains in the fifth decade, could be explained by an increase in life expectancy [23] and by a delayed start of young people to the active life therefore at a better socio-economic level. The fifth decade in our series is the age group most affected (35%). In Ivory Coast, South Africa but also in the West, particularly in Bulgaria and the United States, gouty arthropathy seems to predominate in this same age group [20, 24,25]. However, for many African actors, it predominates in the fourth decade. This is the case of the Pouye et al series in Burundi, Mijiyawa et al in Togo [26,27]. These discrepancies seem linked to methodological differences, particularly in terms of recruitment of patients at the time of gout diagnosis. This is related to the slow formation of sodium urate crystal deposits [26]. The male predominance of gouty arthropathy

is classic [28,29]. Our study is no exception to this rule (sex ratio of 6.6). The difference between men and women in the frequency of gouty arthropathy could be explained by a hormone; estrogen. In fact the latter is uricosuric. Thus, serum uric acid is lower in women before menopause than in adult men. Gout therefore occurs later in women than in men. Gouty arthropathy therefore appears in our series to be a condition of the middle- or high-income population, which is consistent with the observation made by Terkeltaud et al [30] who stated that “gout particularly affects wealthier social classes. The hospital recruitment of patients alone, the retrospective nature of our study and the absence of precise information on income constitute a bias which does not allow us to conclude with certainty that gouty arthropathy is the prerogative of middle-income or middle-income populations. Debates on the role of heredity in the occurrence of gout are still current. To date, no genetic marker has been isolated. In our work, 28% of patients declared having a first-degree relative with gout. Gibson et al. in the United Kingdom reported a higher frequency of 35% of patients with a first-degree relative with gout [31]. However, in our study environment, these percentages can be revised upwards because many people are unaware or have little information about gout [23]. Even more so when it comes to expressing themselves about the place of gout in their families. Being overweight is a major contributing factor that plays an important role in the occurrence of gout worldwide. There is a trend towards obesity in Africa. Our results are not spared from this observation. Fifty-six percent (56%) of our patients are overweight. Thirty-three percent are obese. Urbanization, changes in eating habits, a sedentary lifestyle, migration, the preponderance of starchy foods and cereals in the basic diet; the favorable perception enjoyed by obesity on a social and cultural level are the main factors incriminated [20]. Alcohol is a growing global scourge [32] and Africa is not spared. In gout it is also recognized as a risk factor [33]. Indeed, the use of alcohol would be responsible for ketosis. Ketone bodies will prevent the excretion of uric acid. The latter will therefore accumulate in the blood, leading to hyperuricemia and then gout. Alcohol thus appears, in our series, as the main risk factor. The increasing consumption of alcohol in our societies [20, 23,32] can explain the increase in hospital frequency in our work. The duration of progression of the disease before the rheumatology consultation varies from one (1) year to thirty-one (31) years with an average duration of 4.9 years. In the series prior to ours [23], the duration of progression of the disease before consultation was 5.34 years. This delay in consultation has been deplored in other series, particularly in Ivory Coast. The late recourse to appropriate medical care for patients with gout seems to be explained by: self-medication during attacks; the natural course of gout characterized by acute gouty attacks interspersed with more or less long periods of calm. These periods of calm would not encourage patients to consult early [29]. Inaugural gouty arthritis preferentially affects the lower limbs. The big toe was the most represented (62%) in our series as in other series [20,26]. The upper limbs are not spared, particularly the elbows, wrists and interphalangeal joints, indicating a chronic progression of joint damage [20]. In our series the hip and the spine are spared. However, we report an exceptional temporomandibular location, which suggests that all joints can be affected during gout. Monoarticular access is the initial form classically described, before becoming oligoarticular then polyarticular. In our series, the mode of revelation of gouty disease is mainly polyarticular (40%). Our results agree with those of Zomaheto et al. in Ivory Coast [29]. In their series polyarticular forms represented 65%. This polyarticular predominance seems to be related to the long consultation times and diagnostic difficulties [29]. In comparison with the study carried out at the University Hospital in 1991[23], there is a progression of polyarticular forms. Indeed the damage was oligoarticular in 53.33% compared to 31.67% for polyarticular forms and 15% for monoarticular forms. The shift in the age curve in our series can explain the increase in polyarticular forms, generally the prerogative of the forms of elderly subjects or old drops [29]. The percentage of tophaceous gout remained almost unchanged in the CHUB rheumatology department. It was 18% 20 years ago compared to 17% in our series. The preferential location of the tophi is identical. The first and second rows are always occupied respectively by the elbow and the big toe. The pinna remains a location that is little represented in African gout patients [31] whereas it is legion in Western societies. The cold would be the reason for this contrast. Renal insufficiency makes gouty disease serious in the sense that it is life-threatening. Medications such as nonsteroidal anti-inflammatory drugs, colchicine and allopurinol used for gout are contraindicated in cases of severe kidney failure. Renal failure in gout is linked to tissue and interstitial deposition of uric acid [23]. In our study twelve percent (12%) of patients presented with renal insufficiency at the first consultation. Generally speaking, it should be noted that it is always difficult to distinguish which, kidney failure or gout, preceded the other. Sodium urate crystals are irrefutable proof of the diagnosis of gout. The presence of sodium urate in the joint fluid was detected in 43% of patients. These are mainly patients with joint effusions of the knee due to the ease of sampling from this joint. Our frequency of sodium urate crystals is higher than those reported by Leleu et al., Mody and Maidoo 17% and 5% respectively [34,35]. This difference could be explained by the relatively greater knee joint damage in our study. This explains a greater number of joint samples. The inflammatory blood test is in principle positive in gouty access [36]. In the Mijiyawa series in Togo and Zomaheto in Ivory Coast, not all patients have an inflammatory blood test. positive. The reasons would be: an inflammatory process truncated by anti-inflammatories, laboratory errors [26,29]. In its chronic phase, uratic arthropathy is characterized by classic radiological joint lesions which predominate in the feet and hands. The images usually found were described for the first time by HUBER in 1836 [35]. These are: the halberd image which is the intraosseous or open geodes in the joint and notches on the lateral faces of the epiphyses. The appearance of the “gouty bristly foot in profile” linked to an opposition to erosions and osteophytosis. In our study, forty (40) patients showed no radiological abnormalities. The medical files in our series were marked by

an insufficient number of radiological images concerning the feet and hands. Poor record keeping would be the main reason. For rheumatologists, it allows the diagnosis of gout at the initial stage through the specific images of gout that it shows. Nowadays its place is no longer discussed in terms of diagnostic contribution and gouty arthropathy is no exception to this. In other series, notably African and European, it made it possible to identify a larger number of gouty patients [37,38,39]. The basic treatment is based on allopurinol. It was well tolerated in our series without side effects in all patients. The treatment of the acute attack mainly uses colchicine. It was used in 86% of patients in our series. Abdominal pain, skin itching and diarrhea in 17.4%, 6% and 4.4% of cases respectively were the adverse effects observed. Colchicine is not well tolerated in our patients. This observation is the same in other studies [20, 34,40]. In terms of evolution, the average duration of hospitalization of the patients in our series is 11 days. This duration is approximately the same with a slight decrease. It could be justified by better codified treatment and better support in line with the technological advances recorded in recent years. Gout is a chronic disease. As such, its treatment is long, restrictive and expensive. In the context of their follow-up, gout patients are bad patients. As the results of our study show us, they have poor compliance with prescribed treatment. This observation is the same in several other studies [41].

5. Conclusion

Subject to methodological limitations, our results show that gouty arthropathy retains its place in the Rheumatology department of Brazzaville University Hospital with a slight increase in frequency. Its epidemiological and clinical profile is almost the same in all parts of the world. Gouty arthropathy is a ubiquitous pathology. Its management is made difficult in the event of additional renal insufficiency. Hope is given to the new innovative molecules which have begun to emerge in Western countries.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that they have no conflict of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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