Journal of Advances in Medicine and Medical Research

24(12): 1-7, 2017; Article no.JAMMR.38329
ISSN: 2456-8899
(Past name: British Journal of Medicine and Medical Research, Past ISSN: 2231-0614, NLM ID: 101570965)

Unscheduled Return Visits to the Emergency Department: Case of University Hospital Center in Tunisia

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Authors' contributions

This work was carried out in collaboration between all authors. Authors ZM, MK and Mehdi Methamem designed the study. Authors Mohamed Mahjoub and AA performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors HBS, SBF, MJ, SHS and SZ managed the analyses of the study. Authors IW and AS managed the literature searches. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JAMMR/2017/38329
Editor(s):
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Complete Peer review History: http://www.sciencedomain.org/review-history/22641

Original Research Article

Received 22nd November 2017
Accepted 16th December 2017
Published 9th January 2018

ABSTRACT

Introduction: The re-consultation after short period of initial visit is an indicator of health care's quality offered in the first consultation. They increase health expenditures and reflect a wrong medical care process.
Aims: The aims of this work are to determine the rate of reconsultations in Farhat Hached's Emergency service, Sousse, Tunisia and analyze the demographic characteristics of these patients in short terms, medical history, their chief complaint in initial consultations and disease progression.

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Materials and Methods: We conducted a prospective descriptive study realized in the polyvalent emergency service of university hospital Farhat Hached over a period of 6 months, starting from January the 1st 2015 to June 2015, covering patients reconsulting in an interval of 7 days.
Results: Almost 200 patients needed a second consultation in the 07 next days. The period between 2 consultations in emergency department was 2.66(SD= 1.28) days. The median age of re-consultants was 48 (IQR=17) years old with extremes going from 16 to 84 years. We noticed a predominance of female gender. The most frequent complaints during the first and the second consultations were digestive. The prescribed treatments after first consultations were dominated by antibiotics (39%) and painkillers (34.5%). 49.5% of patients who needed second visit went back home after reconsultations while 50.5% of them needed hospitalization. We have noticed a diagnostic relation established between the two consultations among 140 patients (70%), an aggravation among 65 of them (32%) and 3 deaths (1.5%).
Conclusion: We propose to include second and third health care institution as well as the private sector in order to generalize this study's findings and make it multi-centric.

Keywords: Emergency department; consultation; readmission; patient; hospital; Tunisia.

1. INTRODUCTION

The emergency rooms are currently facing high inflows of patients, in critical or even non-critical situations. The re-consultation after short period of initial visit is an indicator of health care's quality offered in the first consultation. They increase health expenditures and reflect a wrong medical care process. Currently, at emergency department, the unforeseen number of short term reconsultantation is significant and worthy of all attention: 2 à 5% of admissions [1-3].

Furthermore, the major known characteristics of reconsultantation found in literature are: advanced age, co-morbidities as well as disadvantaged social status. Due to these factors, we are frequently confronted in the second consultation to patients having a more severe clinical status requiring hospitalization.
Analyzing the epidemiological, clinical features and etiologic profile of these cases would help to define the group of patients running the risk of short term reconsultations, treat them efficiently and provide a series of methods that will help triage patient [4,5].

The aims of this work are:

- To determine the rate of reconsultations in FarhatHached's Emergency service, Sousse, Tunisia.
- To analyze the demographic characteristics of these patients in short terms, their chief complaint in initial consultations, the disease progression and the consecutive organ failures in order to optimize the overall medical treatment.

2. MATERIALS AND METHODS

We conducted a prospective descriptive study realized in the polyvalent emergency service of university hospital Farhat Hached over a period of 6 months, starting from January the 1st 2015 to June 2015, covering patients reconsulting in an interval of 7 days.

All patients were included, regardless the age or the cause of medical consultation. In this group, we determined whether the worsening of initial health situation was due to diagnosis related issues, natural complication of the disease, eventual iatrogenic complications, another diagnosis unrelated to the first one, or even due to the possibility that the patient left before being fully diagnosed.

The outcomes of patients in second consultations made us divide them into two categories: those requiring an admission and those who are not. A descriptive analysis of the overall study population was carried out. The quantitative variables were expressed as the mean (standard deviation) or median (interquartile range) when more appropriate. Categorical variables were presented as proportions. Statistical analyses were performed with SPSSH version 22.

3. RESULTS

Almost 200 patients needed a second consultation in the 07 next days in Farhat Hached emergency service in the first six months of 2015. Among a total number of 50400 registered patients in the same period, making therefore an inflow of 0.39% reconsultations with

a remarkable increase in January 2015 (Diagram 1).

The period between 2 consultations in emergency department was 2.66 (SD= 1.28) days. 28.5% of patients re-consulted in the next two days. The median age of re-consultants was 48 (IQR=17) years old with extremes going from 16 to 84 years. we noticed a predominance of female gender, with a sex ratio of 0.94. Most of re-consultants came consulting by their own means (73%) (Table 1). The anamnesis data showed that re-consultants' medical histories were dominated by diabetes and that the most frequent complaints during the first and the second consultations were digestive (Tables 1-2). Regarding the initial orientation of these patients, the majority of re-consultants were first examined in the examination rooms, called boxes (68%), the monitoring unit (16%) and reanimation units (9.5%). 62.5% among them were examined by a medical intern.

The prescribed treatments after first consultations were dominated by antibiotics (39%) and painkillers (34.5%). 40.5% of these patients had an appointment to see specialized doctors. During the second consultation, painkillers were prescribed among 27% of patients. 70% of patients needed a second consultation for the same initial complaint due to diagnosis errors in 22.5% of cases, to another pathology different from the first one in 6% of cases, and for incomplete diagnosis in 4.5% of them. In the case of reconsultations because of the same first complaint, the motive of the second was a disease complication in 32.5% of cases, a natural evolution (25%), a planned control (8%) and a non-observance of prescribed treatment (4.5%). 49.5% of patients who needed second visit went back home after reconsultations while 50.5% of them needed hospitalization. We have noticed a diagnostic relation established between the two consultations among 140 patients (70%), an aggravation among 65 of them (32%) and 3 deaths (1.5%).

Table 1. Distribution of reconsultants with the most frequent antecedents

Antecedent	Number	%
Diabetes	37	18.5
Hypertension	14	12
Cancer	3	1.5
Cardiopathology	20	10
Chronic obstructive pulmonary disease (COPD)	28	14
Asthma	13	11.5

4. DISCUSSION

The originality of this research is that beside the fact that it's interested in defining the population running the high risk of aggravation; it is also focusing on the major causes of re-consultations in order to detect the error spots and provide a better and efficient initial medical care. However,

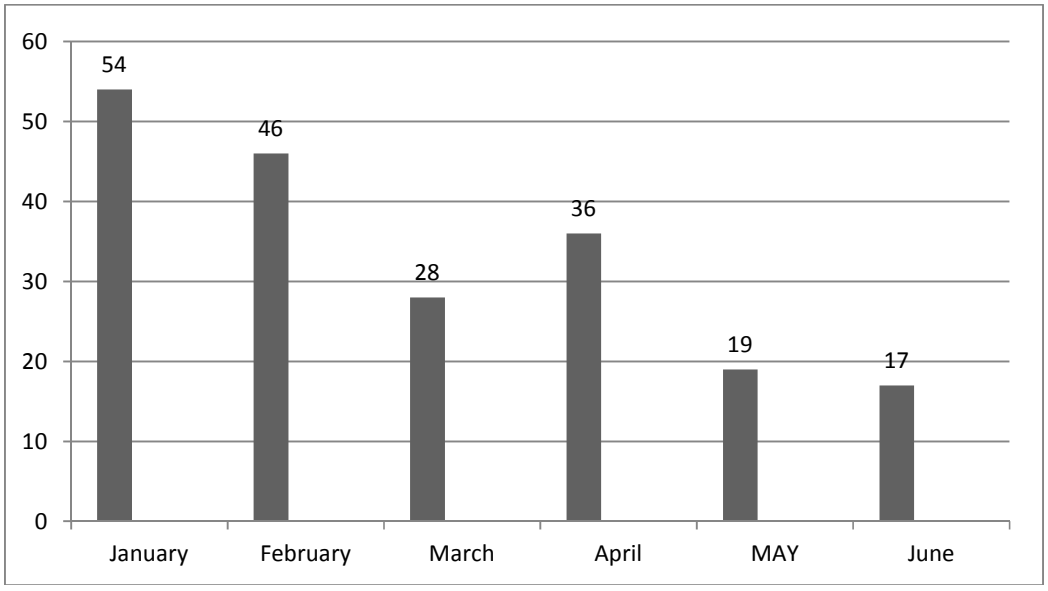

Diagram 1. Distribution of the population by month of consultation

Table 2. Classification of reasons for consultation at first and second consultation

Reason for consultation (system's complain)	First consultation	2nd consultation
Digestive	66(33%)	67(33.5%)
Respiratory	63(31.5%)	61(30.5%)
General, metabolic	17(8.5%)	14(7%)
Cardiovascular	13(6.5%)	13(6.5%)
Dermatological	12(6%)	12(6%)
Urinary	9(4.5%)	13(6.5%)
Osteoarticular	7(3.5%)	5(2.5%)
Neurological	7(3.5%)	8(4%)
Otalgia/otorrhea	3(1.5)	3(1.5%)
Psychological	3(1.5%)	3(1.5%)
Female genital tract	1(0.5%)	1(0.5%)
Total	**200(100%)**	**200(100%)**

certain biases may be encountered such as selection biases. In fact, it should be noted that in our research we didn't include the economic or social status of these categories of consultants. The patients having precarious standards of living make important the total number of re-consultations. The reason of their second visit are too various, sometimes for temporary accommodation. In addition, the lack of general medicine access represents a major obstacle. Actually the majority of cases could have been treated by a family doctor. The confrontation of re-consultations in emergency service is too variable going from 0.4% to 0.18 %with different periods of re-consultations (between 72 hours and a month) [1-10]. In reality, the inflow increases generally with intervals of longer time. 15% of re-admissions in 28 days were reported [9,10]. 28% over three months, 38% over six months [11]. But such a tendency is not necessarily generalized. Actually, according to Rising the inflow of reconsultations has crossed 47% in a less time than 72 hours, 75% in the next 144 hours [7]. Nunez noted that concerning the symptomatology, the reconsultations inflow for the same initial complaint is acceptable if it is less than 1%. A higher inflow reflects a dysfunction of emergency units and contributing factors must be detected [3]. The research of WU, showed that, considering re-consultation inflows as a performance index of emergency units is too far from being ideal because the differentiation between the natural evolution of disease, the optimal treatment, the level of patients' anxiety, and medical errors is too difficult in urgent situations [5]. The reconsultations in the 72 hours figured in the majority of researches. This period has a strong point: the ability to eliminate the majority of comebacks for a different motive [3,4,10,12,13] and [14]. The reconsultations among the next month of first visit do not reflect an aggravation of the initial symptomatology [3,15,16]. In addition, other researches propose periods from 8 to 14 days between the 2 consultations [2,17,18,12,19,13,20]. An advanced age is a risk factor of returning to emergency services for second consultation in the most of literature researches. The geriatric population considering the frequency of co morbidities is repeatedly consulting emergency units [3,5,7,12,21]. Actually the main researches done in France on this subject mainly concerned the aged group of patients [21]. Furthermore, ADEKOYA found that re-consultants belonged to an age range between 25 and 44 [22]. On the other hand, Kuanet al found that it is significantly more frequent among patients aged from 16 to 33 [4]. The distribution according to the gender in literature is widely appreciated. Some researches claim a masculine predominance [4,5,13, 23,16,24] while for others this group of patients is mainly composed of women [8,25,26,27,28]. The social status interferes with the reconsultations inflow. Patients having precarious life conditions find no other way but to come consult in the emergency services. A research done by MOORE reported that re-consultants belonged mainly to the homeless people, persons with governmental pensions, or those living in social care homes [8]. When it comes to medical history of these patients, according to a research of SAUVIN, most consultants had psychiatric diseases in 17% of cases, alcohol addiction (16%), hypertension (14%), neurological diseases (10%), pulmonary diseases (7%) [23]. This research focuses on the influence of the triage score on the frequency of reconsultations. The more this score is high the more patients are more likely to require an admission. Abdominal pain is the most frequent symptom of re-consultants in emergencies the misleading and

vague character of this symptom is the main explication of this high frequency [4,8,10,12,20,28]. In Kuans's research 25.1% of patients came back for abdominal pain, the diagnosis posed in the second consultation was cholecystitis in 3.8% of cases, digestive occlusive syndrome (3.3%) , appendicitis in 0.9% [4]. Other symptoms are considered, according to many researches, as risk factors of reconsultations: headaches, renal colic, dizziness, epistaxis, fever, lumbago [3-5,16,29,30,31,32]. Moreover, it is necessary to indicate the orientation of patients after their second consultation, for Nuñez, 21% of patients were admitted to hospital services and 2% to reanimation units , 18% were kept in emergency surveillance rooms and a chirurgical treatment was necessary in 5% of cases [3]. He found that there were a significant correlation between the fate of patients and these following factors: age, dyspnea, neurological medical history, and history of a cardiopathy. At the end of different researches realized about this subject [3,5,23,16,24,29,21,22,33], they all mentioned: age superior or equal to 65 years, oncological history, cardiopathy, psychiatric diseases, second consultation being accompanied by a relative, being addressed by a family doctor, the severity of triage score, diagnosis related investigations in the first consultation. Though, Nuñez researches classified predictive factors of reconsultations in emergencies into changeable factors and unchangeable ones. In order to overcome the frequency of reconsultations many solutions are proposed such as the obligatory creation of short term hospitalization unit inside the emergency services that helps avoiding early release of patients without having to make unnecessary hospitalizations [3]. This unit would satisfy the three actors of hospital circuit: patient, doctor and the health care system. And the focus must cover the work conditions of emergency personnel: number of workers, hours of work, stress management and prevention of violence. Finally, in case of lack of hospitalization space, it would be effective to hospitalize them transitorily in peripheral hospitals.

5. CONCLUSION

At emergencies, the short term reconsultations have a significant percentage that deserves all attention. The majority of re-consultants have advanced ages, multiple co morbidities and precarious social status. This population is considered according to some researchers as a health quality index, Cause of additional health costs, and a penalization of health care system. The vocation of emergencies is to make the good diagnoses, to put in place the right therapies and to guide the patient. Each return visit to emergency department is associated with various deficiencies either of hospital or health providers. Considering the importance of emergency care, more proper and strategic assessment and treatment for patients determining emergency care should be provided. Strategies on emergency triage systems should be considered. Hence, we should set up a well-coded guide for initial medical care in order to avoid missing of serious cases, to ensure a proper care, to limit reconsultations and aggravations. Furthermore, we can implant a register to collect data about characteristics of patients admitted in emergency department.

We propose to include second and third health care institution as well as the private sector in order to generalize this study's findings and make it multi-centric.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

It is not applicalble.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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PubMed PMID: 16912620.

Peer-review history:
The peer review history for this paper can be accessed here:
http://sciencedomain.org/review-history/22641