

# DISEASE PATTERN OF PATIENTS ADMITTED DURING HAJJ TIME AND PROVISION OF HEALTH SERVICE TO FULFILL THE NECESSARY PILLARS OF HAJJ

Khalid Obaid Dhafar,<sup>1</sup> Mostafa J Baljoon,<sup>2</sup> Zohair Jamil Gazzaz,<sup>3</sup> Fauzea Talea Al-Hothali,<sup>4</sup> Basma Abdulhameed Deyab,<sup>4</sup> Muhammad Imran<sup>2</sup>

## ABSTRACT

**Background:** Hajj is a religious obligation for the Muslims who can afford and about three million people around the world come to Saudi Arabia to perform Hajj. Hospital admissions are due to acute diseases and trauma or exacerbation of comorbid conditions. Hajj Caravan, a unique experience, is a program of patients' movement under supervision. **Objective:** To determine the disease pattern and their status of suitability to go with Hajj caravan in the patients admitted during Hajj-time. **Methodology:** This was an observational and descriptive study and data of five big hospitals of Makkah, for the year 2013/ 1434H, was collected to see the disease patterns of all the patients, their status regarding permission or refusal to go with Hajj Caravan and whether the matter was discussed with the patients. Resources used for this movement, were also observed. Data was entered and analyzed by using SPSS version 16. **Results:** Two hundred and seventeen patients were included in the study, majority from Middle East, African and South Asian countries. Disease patterns was: trauma, 18%, GIT infection 17% and CVS disease 15%. One hundred and ninety seven patients got permission to go with Hajj Caravan and 20 patients were refused. This decision was taken by 2 consultants and mostly it was found to be subjective. **Conclusion:** Most common disease during Hajj were trauma, gastrointestinal infections and cardio vascular disease. Although Hajj-Caravan is a well-organized movement of patients for a compulsory ritual of Hajj, more structured policies are required related to this unique movement of inpatients from hospitals.

**Key words:** Hajj time, Health services, Diseases.

JSZMC 2016;7(2):946-950

## INTRODUCTION

Hajj is a unique experience for Muslims around the world and it is compulsory for those who can afford to perform it both physically and economically. There are certain acts without which Hajj is invalid and these include wearing Ihram (special clothes), staying in Arafat on the 9<sup>th</sup> day of Dhul-Hijjah, from midday until the dawn of 10<sup>th</sup> day of Dhul-Hijjah, (the stay may be shortened) and performing Tawaf-e-Ziyarat between 10<sup>th</sup> and 12<sup>th</sup> of Dhul-Hijjah.<sup>1</sup>

People of diverse ethnic origin, come from almost all regions of different continents. It is estimated that around 3 million people come for Hajj every year.<sup>2</sup> All from different age groups, and some very old. It is not an easy task for many people, especially poor, to leave their native countries and go to Saudi Arabia to perform Hajj. So, for many people it is a once in a life time experience and they cannot afford to abandon it at any cost. However, many persons come with co-morbid medical conditions and these are the reasons for many hospital admissions during Hajj.<sup>3</sup> Pneumonia is another leading cause of hospital

admission for pilgrims.<sup>4</sup> Some of them are too sick to perform Hajj. The Government of Saudi Arabia has arranged a program for the patients admitted during Hajj so that they can perform compulsory pillars of Hajj under supervised medical care and they move in a group called Hajj Caravan.<sup>5</sup> Of course only those patients can go with Hajj Caravan who get permission from authorities.

Movement of patients from hospitals for a certain period of time can be disastrous in certain situations and it is not easy to decide which patient can or cannot go, especially in this era of moral obligations and enormous volume of litigations.<sup>6</sup> The patient's wish is another important factor when decisions are made about him/her and many patients wish to participate in this decision-making by the medical professionals.<sup>7</sup> Jehovah's Witness is an example, where an adult and mentally competent person can refuse blood transfusion even in life-threatening conditions.<sup>8</sup> There are various scoring systems to evaluate objectively the condition of patient and to predict mortality and morbidity in a critical situation e.g. Acute Physiology and Chronic Health Evaluation (APACHE) and its modification

1. Department of Surgery, Al-Noor Specialist Hospital, Makkah Al-Mukaramah, KSA.

2. Kind Abdulaziz University, Jeddah, KSA

3. Dental Surgery, Qunfudah Health Affairs, KSA

**Correspondence:** Dr. Khalid Obaid Dhafar, Consultant General Surgeon, Department of Surgery, Al-Noor Specialist Hospital, Makkah Al-Mukaramah, KSA

E-mail: research2@healthcareexpertise.org

Mobile: +966555508794

Received: 26-03-2016

Accepted: 04-05-2016

APACHE-II, Simplified Acute Physiology Score (SAPS), Mortality Probability Model (MPM) etc.<sup>9</sup> In this study, we observed the disease pattern and their status of suitability to go with Hajj caravan of the patients admitted during Hajj-time.

## METHODOLOGY

This was an observational and descriptive study. All records from King Abdulaziz Hospital, Al-Noor Specialist Hospital, Heraa General Hospital, King Faisal Hospital and Maternity & Children's Hospital were reviewed. Data was collected of patients who were admitted during Hajj days and who were candidates to perform Hajj in the year 1434 H/ 2013. Data of all the patients admitted during Hajj days with any disease was included in the study. Ethnic origin of the patients and diseases with which they presented, were also the focus of the study. We also included the patients who received permission to go with the Hajj Caravan and those who were refused permission. Criteria for permission or refusal was also recorded and if the patient was included in the decision making or just followed instructions and signed the consent. Another perspective of the study was to appreciate which resources were used for the care of those

patients, the doctors, nurses, paramedical staff and other administrative or supportive staff accompanying the patients. Transport facilities, ambulances and other supportive resources and equipment used during that period were also noted. The study was conducted after approval of Ethical Committee, of the Hospitals. The data was entered and analyzed by using SPSS version 16.

## RESULTS

Total number of patients admitted during Hajj days (1434H/ 2013), was 217; 88 in King Abdulaziz Hospital, 63 in Al-Noor Specialist Hospital, 8 in Heraa General Hospital, 50 in King Faisal Hospital and 8 in Maternity & Children's Hospital. The number of male patients was 126 (58%) and females 91 (42%). Patients were from different ethnic origins but majority of them were from Middle East, African or Indian subcontinent (South Asian) origin. (Figure I).

Patients were admitted with various diseases, amongst them trauma, (18%) Gastrointestinal infections (17%) cardiovascular (15%) and respiratory problems (11%) were more common. (Table I)

**Table I: Pattern of diseases in patients admitted to different hospitals during Hajj**

Diseases	Number of Patients					Total No (%)
	King Abdulaziz Hospital	Al-Noor Specialist Hospital	King Faisal Hospital	Heraa General Hospital	Maternity & Children's Hospital	
Trauma & Fractures	19	2	19			40 (18.4%)
Cardiovascular Problems	15	15	3			33 (15.2%)
Skin & soft tissue infections	13	2	5			20 (9.2%)
Respiratory system and related disease	12	7	4	1		24 (11%)
Neurological/ Psychiatric	9	10	7	2		28 (12.9%)
Gastrointestinal Hepatobiliary systems	7	20	8	3		38 (17.5%)
Renal disorders	6	4	2			12 (5.5%)
Metabolic disorders	4		2			6 (2.7%)
Septicemia	3	2		2		7 (3.2%)
Blood disorders (Leukemia)		1				1 (0.4%)
Gynecological or Obstetric problems					8	8 (3.6%)
<b>Total</b>	<b>88</b>	<b>63</b>	<b>50</b>	<b>8</b>	<b>8</b>	<b>217 (100%)</b>

Table II. Number of patients permitted or refused to go with Hajj Caravan

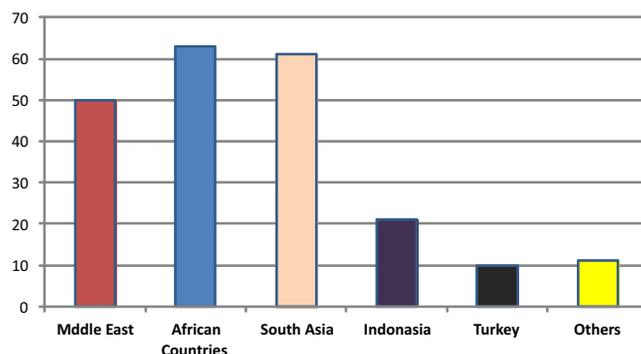
Name of Hospital	King Abdulaziz	Al-Noor Specialist	Heraa General	King Faisal	Maternity & Children's	Total
Permitted to go with Hajj Caravan	73 (82.9%)	63 (100%)	6 (75%)	47 (94%)	8(100%)	197(90.7%)
Refused permission to go with Hajj Caravan	15 (17.04%)	0	2 (25%)	3 (6%)	0	20 (9.2%)

Most of the patients, (91%) included in the study, were allowed to go with Hajj Caravan. The decision was taken by two consultants based on the condition of each patient. A written consent was obtained from those patients who were permitted to go with Hajj Caravan. Resources, either human resources or otherwise, used during that period are mentioned in (Table III).

Table III. Resources used for patients in Hajj Caravan in 1434H/ 2013

Resources used for 217 patients	Patients
Doctors	72
Nursing staff	117
Special/ respiratory technicians	6
Nutritionist	12
Religious awareness attendants	15
Administrative staff	41
Security guards	27
Social care specialist	11
Other staff	9
Buses	25
Ambulances	13
Oxygen cylinders	56
Suction devices	34
Cardiac monitors	26
Pulse oximetry	20
Glucometers	9
Medicine bags (necessary medication etc.)	43

Figure I: Ethnic origin of patients from different areas admitted to different hospitals of Makkah region



\*Others include Russian states, Malaysia, America, England and China

## DISCUSSION

Our study showed that 217 patients were admitted to different hospitals in Makkah during Hajj days. The patients were from different ethnic origin, and reasons for the hospital admissions were either acute or chronic diseases. We observed that the majority of them were allowed to perform Hajj under medical supervision in a group called Hajj Caravan. It was noted that a lot of resources were used in this movement.

Although there were many studies which describe different diseases-patterns during Hajj-time, in one study authors described the common patterns of diseases as Meningococcal diseases, respiratory diseases, skin infections, diarrhea, other infectious diseases and non-communicable diseases like cardiovascular and trauma.<sup>10</sup> In a recent study, it was observed that patients admitted during Hajj-time belonged to different ethnic areas, and among them common diseases-pattern was respiratory problems (17.6%) and skin diseases (15.7%) followed by gastrointestinal diseases (13.2%)<sup>11</sup> while in our study trauma Gastrointestinal and cardiovascular diseases predominates, followed by infections and chest problems. This change of pattern was probably due to patient population from different hospitals. In another study, the importance of mass-gathering

health policies was discussed.<sup>12</sup> Mass-gathering can impose greater burden on health care facilities with non-communicable diseases, with even higher rate of morbidity, or even death.<sup>13</sup> The real challenge during Hajj is huge number of patients and limited resources, as in a study, it was estimated that more than 1.2 million patients attended health care facilities during one Hajj-season, and number of admitted patients was more than 4000.<sup>14</sup> One could imagine burden of health care facilities in one city during limited time period. In an article, Anders Johansson et al (2012) discussed crowd management in mass gatherings, keeping in view the gathering during Hajj.<sup>15</sup> In one study, it was discussed that patients on palliative care can be sent home if they desire.<sup>16</sup> However, we could not find any study which discussed movement of patients in Hajj-Caravan as this is a unique experience. No such similar movement has been reported around the world. Therefore it is important to consider some points related to this movement. Most important is the fitness of patients and the decision process of giving permission. We know this point is well-considered as it is stated that permission is given by two consultants familiar with the condition of their patients. However, there is always room for improvement and more organized and structured protocols could be considered. Provision of facilities to those patients with Hajj Caravan is another important factor. We are aware of the commitment of the Ministry of Health and they provide a level of paramount importance to this issue which is obvious from the data shown in this study.

Ethical consideration is another point of equal importance. Although a written consent is obtained from all patients after they receive an explanation about the benefits and consequences of joining the Hajj-Caravan, there is little evidence as to the level of actual involvement of each patient. Are they free to take a decision or just briefed and dictated to, by the health professionals. Many patients, with autonomy to take decisions about themselves, wish to go with Hajj-Caravan whatever the consequence. A policy should be established to solve these issues.

It is very obvious in this study that many patients come from other countries with serious co-morbid conditions e.g. end stage renal or liver failure and even patients with advanced stage malignancy. It is imperative that health authorities of those

countries should implement policies to handle these issues. Hajj is only compulsory for those Muslims who are physically fit and can afford to travel. Saudi Ministry of Health has given some recommendations for the 1435/2014 Hajj to combat with Corona-virus spread. It was suggested that small children, old-aged persons, pregnant ladies and patients with comorbid conditions should reschedule their plans regarding performance of Hajj that year.<sup>17</sup>

There are certain limitations of this study. Because Hajj-Caravan is a distinctive experience around the world, we could not find literature to support this movement of patients. Being an observational & descriptive study, we could not focus much on qualitative aspect as we neither performed interviews with the patients nor asked direct questions from the patients and solely depended upon record of hospitals.

## CONCLUSION

This study showed that most common disease during Hajj were trauma, gastrointestinal and cardiovascular disease. Although Hajj-Caravan is a well-organized movement of patients for a compulsory ritual of Hajj, more structured policies are required related to this unique movement of inpatients from hospitals.

## Acknowledgment

Authors would like to thank, for their intellectual contributions, the members of Bait Al-Khibra (House of Expertise) at King Abdulaziz University, Jeddah, Saudi Arabia especially the Scientific Advisor Professor Hamed Habib (former Dean, Rabigh Medical College). The authors also would like to thank the General Directorate of Makkah Region Health Affairs for providing approval and facilitating data collection.

## Conflict of Interest

There is no conflict of interest.

## REFERENCES

1. Haq M IU. Companion of Hajj. USA: Xlibris Corporation; 2014.
2. Eid R. Towards a high-quality religious tourism marketing: the case of hajj service in Saudi Arabia. *Tourism Analysis* 2012; 17(4):509-22.
3. Al-Ghamdi SM, Akbar HO, Qari YA, Fathaldin OA, Al-Rashed RS. Pattern of admission to hospitals during Muslim pilgrimage (Hajj). *Saudi Med J* 2003; 24(10):1073-76.
4. Mandourah Y, Al-Radi A, Ocheltree AH, Ocheltree

- SR, Fowler R A. Clinical and temporal patterns of severe pneumonia causing critical illness during Hajj. *BMC Infectious Diseases* 2012; 12(1):117-21
5. Dhafar KO, Gazzaz ZJ, Shahbaz J. Hajj caravan 1423. *Saudi Med J* 2004; 25(10):1529-30.
6. Baker T. The Medical Malpractice Myth (Large Print 16pt). *ReadHowYouWant.com* 2011.
7. Chewning B, Bylund CL, Shah B, Arora NK, Gueguen JA, Makoul G. Patient preferences for shared decisions: A systematic review. *Patient Educ Couns* 2012; 86(1):9-18.
8. Brydon C. Jehovah's Witnesses. *Anaesthesia & Intensive Care Medicine* 2013; 14(2):79-81.
9. Vincent JL, Moreno R. Clinical review: scoring systems in the critically ill. *Crit Care* 2010; 14(2):311-20
10. Ahmed QA, Arabi YM, Memish ZA. Health risks at the Hajj. *The Lancet* 2006; 367(9515):1008-15.
11. Bakhsh AR, Sindy AI, Baljoon MJ, Dhafar KO, Gazzaz ZJ, Baig M, Deiab BA, Al Hothali FT. Diseases pattern among patients attending Holy Mosque (Haram) Medical Centers during Hajj 1434 (2013). *Saudi medical journal*. 2015 Aug;36(8):962-66
12. Memish ZA, Stephens GM, Steffen R, Ahmed QA. Emergence of medicine for mass gatherings: lessons from the Hajj. *The Lancet infectious diseases* 2012; 12(1):56-65.
13. Steffen R, Bouchama A, Johansson A, Dvorak J, Isla N, Smallwood C, Memish ZA. Non-communicable health risks during mass gatherings. *The Lancet infectious diseases* 2012 Feb 29;12(2):142-9.
14. Timbie JW, Ringel JS, Fox DS, Pillemer F, Waxman DA, Moore M, Hansen CK, Knebel AR, Ricciardi R, Kellermann AL. Systematic review of strategies to manage and allocate scarce resources during mass casualty events. *Annals of emergency medicine* 2013;61(6):677-89.
15. Johansson A, Batty M, Hayashi K, Al Bar O, Marcozzi D, Memish ZA. Crowd and environmental management during mass gatherings. *The Lancet infectious diseases* 2012; 12(2): 150-156.
16. Wheatley VJ, Baker JI. "Please, I want to go home": ethical issues raised when considering choice of place of care in palliative care. *Postgrad Med J*. Oct 2007; 83(984): 643-648.
17. Memish ZA, Al-Tawfiq JA, Al-Rabeeah AA. Hajj: preparations underway. *The Lancet Global Health* 2013; 1(6):e331.