

Frequency and Trend of Common Diseases Requiring Specific Sonography and X-Ray System in Iranian Pilgrims Referring to Clinical Imaging Centers during Hajj 2015

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Abstract: Every year more than 2 million people depart from Iran to Saudi Arabia for Hajj ritual which can be faced with various diseases. There are not much information about frequency and trend of diseases in Hajj. The aim of this study was to evaluate the needs of pilgrims after clinical examination and ultrasonography before the pilgrimage to assess the accuracy of diagnosis and prevention of adverse problems during Hajj pilgrims. We established a specific surveillance system for all Iranian pilgrims who had participated in Hajj from 2015. We monitored the pilgrims' health status before departure, through their journey. The occurrences of diseases were recorded on are searchers-made questionnaire. We used chi-square test for analysis with the alpha lower than 5% to reject the null hypothesis. During Hajj periods, a total of the reference of 2982 (Including graphy & sonography) of Iranian pilgrims were monitored for more common diseases with this system. The most prevalent diseases were as follows: six type sonography: of Abdomen and pelvis (3.09%), Liver and gallbladder and spleen (3.06%), Kidney and urinary tract(2.71%), lungs(1.64%), Kidneys and prostate(1.43%) and Uterus and appendages(4.36%) also; X-Ray of Abdomen(1.88%) and chest(6.9%). There were statistically significant differences between frequency of each type of sonography ($p < 0.05$). Also there were statistically significant differences between graphy of abdomen and chest ($p < 0.05$). Health managers should be informed about trend and frequency of more prevalent diseases in Hajj. Easy access to health information via such surveillance system can be possible.

Keywords: Disease, Prevalence, Imaging, Iran, Mecca, Medina

1. Introduction

Annually, millions of Muslims embark on a religious pilgrimage called the "Hajj" to Mecca in Saudi Arabia. The mass migration during the Hajj is unparalleled in scale, and pilgrims face numerous health hazards. The extreme congestion of people and vehicles during this time amplifies health risks, such as those from infectious diseases, that vary each year. Since the Hajj is dictated by the lunar calendar, which is shorter than the Gregorian calendar, it presents public-health policy planners with a moving target, demanding constant preparedness [1].

There are many variables that predispose pilgrims to become ill. Some of these factors are: overcrowding, stresses, dietary changes, sleep habits, over-enthusiastic exertions and strenuous physical efforts [2]. Therefore, the pilgrims can be faced with various diseases such as respiratory diseases with prolonged coughs [3],[4], exacerbation of their previous diseases like bronchial asthma, chronic obstructive pulmonary diseases (COPD) [5], diabetes mellitus, hypertension, cardiac diseases, neurological diseases and getting new diseases including stroke [6], gastroenteritis and food poisoning, hepatitis A, B & C, various zoonotic diseases [7],[8], behavioral, mood and sleep disorders [9], and various degree of injuries during Hajj period [10].

This systematic review aims to summarize the incidence and etiology of diarrheal illness among pilgrims attending the Hajj and Umrah. Gastroenteritis and diarrhea have been potential threats during previous Hajj

pilgrimages. Nevertheless, gastrointestinal diseases, food-poisoning outbreaks, and diarrhea continue to occur among pilgrims [11].

Respiratory tract infections, ENT infections, influenza, pyogenic pneumonia, whooping cough, and tuberculosis are most frequently observed during the Hajj. Outbreaks of meningococcal meningitis have been reported in pilgrims and their contacts. Waterborne infections such as gastroenteritis and hepatitis A are common, despite the improvement of health conditions [12].

Transmission of respiratory infections poses a major public health challenge during the Hajj and Umrah in the Kingdom of Saudi Arabia. Acquisition of *Streptococcus pneumoniae* during Hajj has been studied in the past and recommendations for vaccination against *S. pneumoniae* have been made for high risk groups [13]. We review the communicable and non-communicable hazards that pilgrims face. With the rise in global travel, preventing disease has become paramount to avoid of infectious diseases, severe acute abdominal, kidney and liver . We examine the response of clinicians, the Saudi Ministry of Health, and Hajj authorities to these unique problems, and list health recommendations for prospective pilgrims. However, in this study, we aimed to determine the frequencies and the trend of the most common diseases using a specific sonography and X-Ray system during Hajj 94. The results of this study can help health providers to plan for better years.

2. Material And Methods

A total of 2982 Iranian pilgrims were monitored in for 6 types of common diseases in radiology system. The mean age of under studied pilgrims was 51 years, ranged from 15 to 95 years old, and sex distribution of 58% female and 42% male. The study was Iranian Hajj Hospital in the Department of Medicine in Makkah and Medicine. The participants constitute 2892 included all Hajj patients Inpatient and outpatient in the Department of sonography and graphy 2015 the Hajj.

Information about; past medical history; pre-Hajj functional status; diagnosis for admission was obtained prospectively using a standardized form [6].

Instrument: The physicians monitored and recorded any occurrence of the diseases among the pilgrims on a researchers-made questionnaire. Validity of the questionnaire was confirmed by some experts and its reliability verified in another study one year before starting the main project (2). Physicians of each caravan trained for the method of filling the questionnaire before their journey. The completed forms were checked by health surveillance supervisors.

Statistical analysis and ethical issues: We considered the dichotomous nominal variables for all of our analyses based on having a condition. Chi-square test was used for analytical purposes. Alpha was considered lower than 5% to reject the null hypothesis. The filled questionnaires were anonymous and had no ethical restrictions.

3. Results

Table I indicates sonography reports in Iranian Pilgrims in Mecca and Medina during Hajj 2015.

TABLE I. Sonography Reports in Iraninan Pilgrims in Mecca and Medina during Hajj 2015

Sonography	Past History of Imaging	During Hajj	Total
Abdomen and Pelvis	91	218	309
Kidney and Urinary Tract	53	218	271
Liver , Gallbladder and Spleen	60	246	306
Lung	32	132	164
Kidney and prostate	28	115	143
Uterus and Appendix	130	306	436
Total	394	1235	1629

According to our findings, sonography of uterus and appendix had higher frequency and sonography of kidney and prostate had lower frequency.

4. Discussion

In many cases, familiarity with the process of diagnosis and clinical course is essential for proper diagnosis. But in the meantime, laboratory tests and imaging should be used to high recognition accuracy. Due to the close cooperation between clinicians and radiologists need for a process to follow the correct diagnosis and reasonable and proper diagnosis is necessary. Determine the therapeutic approach fast in low and rituals of Hajj pilgrims due to time is a very important and effective. They complained of abdominal pain to hospital.

Scientific principles and accurate, comprehensive view of clinical and preclinical study pilgrims are created, it is hoped that this process is consistent, recognizable direction directed properly so that early treatment may be possible according to the rites of Hajj pilgrims with high Rahpymayhay concerns continue pilgrims practices prevented. On the other hand, according to the patient's case history before the trip, the pilgrims emergency treatment without having to move the patient, Providing diagnostic imaging and therapy of conditions that clinically is done by a doctor at a time without concern.

5. Conclusion

The findings show that imaging – sonography- has considerable frequency during Hajj rituals in Iranian population requiring more clinical attention to this issue by health authorities.

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7. References

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