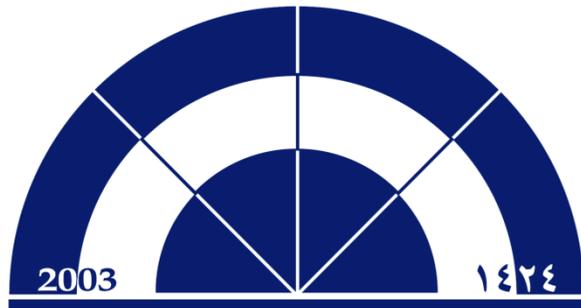


Pattern Of Heart Disease In Socotra Island

أنماط أمراض القلب في جزيرة سقطرى

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Abstract :

Socotra is a small archipelago in Yemen located in Indian Ocean and consists of the main island of Socotra and three smaller islands. The healthy service in this island is rare and there is lack of medical facilities in this island .There is no studies were done regarding the pattern of heart disease in this island, so the aim of this studt to high light the cardiovascular problem among SOCOTRIAN people and show its pattern which reflects the magnitude of problem.

Aim : The aim of our study is to estimate the pattern of heart disease in Socotra Island.

Methods : During March 2013 while out reach program which is organized by non-governmental organizations which was held in Khalifa Bin Zayed Al Nahyan hospital – Hadibu district (the capital of the island), 123 patients were consulting and subjected to clinical examination and suspected cases were referred to ECG and echocardiography beside the routine laboratory and

chest X-ray. The data collected and subjected to statistical analysis and main abnormality was left ventricular hypertrophy.6 patients were diagnosed as congenital heart disease mainly non cyanotic .9 patients had rheumatic heart disease mainly double valve disease. 14 patients were found to have arterial hypertension, and 11 patients needs cardiac intervention (coronary angiography, valve replacement, percutaneous mitral and pulmonary valvulopalsty).

Recommendations:Cardiovascular disease represents a big problem in SOCOTRA Island. Rheumatic heart disease and arterial hypertension was more common cardiovascular disease and health and health organizations with ministry of health should interfere to tackle this health problem either by preventive of curative program.

Keyword: rheumatic heart disease, Socotra Island, arterial hypertension.

المخلص :

جمعتها تم تحليلها إحصائياً. أظهرت الدراسة أن معظم المرضى يعانون من تضخم في البطين الأيسر. وتم تشخيص ستة (6) مرضى يعانون من أمراض القلب الخلقية خاصة العيوب غير المصاحبة بالازرقاق. وتسعة (9) من المرضى يعانون من الإصابة بأمراض القلب الروماتيزمية وخاصة آفة الصمامات المختلطة. وتم تشخيص أربعة عشرة (14) مريضاً لديهم ارتفاع ضغط الدم الشرياني، وأحد عشر (11) مريضاً يحتاجون لتدخل علاجي للقلب.

التوصيات: تمثل أمراض القلب والأوعية الدموية مشكلة كبيرة في جزيرة سقطرى. وأمراض القلب الروماتيزمية وأمراض القلب الشرايين وارتفاع ضغط الدم الشرياني أكثر شيوعاً، والمنظمات الصحية مع وزارة الصحة يجب أن تتدخل لمعالجة هذه المشكلة الصحية إما عن طريق الوقائية أو برنامج علاجي.

سقطرى محافظة يمنية، وهي عبارة عن أرخبيل يقع في المحيط الهندي، ويتكون من سقطرى الجزيرة الرئيسة، وثلاث جزر أصغر. الخدمة الصحية في هذه الجزيرة هي نادرة، وهناك نقص في المرافق الطبية في هذه الجزيرة. لا توجد هناك أي دراسات حول نمط الإصابة بأمراض القلب في هذه الجزيرة.

الهدف: الهدف من دراستنا هو تقدير نمط الإصابة بأمراض القلب في جزيرة سقطرى. منهجية البحث: خلال مارس 2013 بينما برنامج أيادي الخير التي تنظمها المنظمات غير الحكومية الذي عقد في مستشفى خليفة بن زايد آل نهيان - بمنطقة حديبو (عاصمة الجزيرة)، تم معاينة مائة وثلاثة وعشرين (123) مريضاً، وخضعوا للفحص السريري وتمت إحالة الحالات المشتبه منهم لعمل تخطيط للقلب وعمل الرسم الصدوي للقلب، إلى جانب الفحص المخبري الروتيني والأشعة السينية للصدر. البيانات التي تم

Introduction :

Socotra, also spelled Soqotra, is a small archipelago. The archipelago in Indian Ocean and consists of the main island of Socotra (3,665 km²), the three smaller islands of Abd Al Kuri, Samhah and Darsa and small rock outcrops like Ka'l Fir'awn and Sābūnīyah that are uninhabitable by humans but important for seabirds (1) .It lies some 240 kilometres east of the Horn of Africa and 380 kilometres south of the Arabian Peninsula (2). The island measures 132 kilometres in length and 49.7 kilometres in width. (3)

Almost all inhabitants of Socotra, numbering nearly 50,000, live on the homonymous main island of the archipelago. The archipelago forms two districts of the Hadhramout Governorate:

- the district of Hadibu , with a population of 32,285 and a district seat at Hadibu, consists of the eastern two-thirds of the main island of Socotra;
- The district of Qulansiyah wa 'Abd-al-Kuri, with a population of 10,557 and a district seat at Qulansiyah, consists of the minor islands (the island of 'Abd-al-Kūrī chief among them) and the western third of the main island.(4)

The health service in SOCOTRA is very basic. The island is so isolated from the mainland that the cost if even the most basic daily food requirement is exorbitant; the health system is poor and consequently there are high rates of morbidity and mortality.

The first public clinic on SOCOTRA was built in the 1950s with the British help. By 2009, the health infrastructure consisted of one district general hospital in Hadibo, the capital town of Socotra; one health centre in Qalansiys district; and around 15 primary health units all over the island more than half were non functioning as well as some private clinic and pharmacies.

Regarding the health problems in Socotra, there were no available statistic, but research was done focusing on health

problems in 2009 reveals main problems are in respiratory and gastro-intestinal but no data regarding cardiovascular diseases in Socotra.

The aim of our study is to estimate the pattern of heart disease in Socotra Island.

Patients and Methods :

During march 2013 in Khalifa Bin Zayed Al Nahyan hospital – Hadibu district (the capital of the island), The Hospital built with funding from Khalifa bin Zayed Al Nahyan Humanitarian Foundation. 123 patients were screened by team consist of 6 cardiologist, 2 of them are specialist in pediatric cardiology in out patient clinic. Each patient was subjected to careful full history taken, detect risk factors for ischemic heart disease, all medications taken and any intervention was done to the patient followed by complete clinical examination stressing on cardiac auscultation, lower limb, head and neck and chest examination with blood pressure measurement.12 leads standard electrocardiogram (ECG) was done to most of patients.

For the first time of the history of the island an echocardiography machine was introduced and echocardiography was requested according to the clinical condition of the patient for diagnosis of heart disease or follow up.

All these data were collected in questionnaire prepared, coded, revised and entered into personal computer and analyzed using SPSS program version 10.

Results :

One hundred and twenty three patients screened for presence or absence of cardiovascular disease, 62 of them were male (50.4%), and 61 (49.6%) were female with age range from 5-80 years with mean age 38.27 ± 17.77 . 26 patients (21.1%) were hypertensive ,4 patients(3.3%) were known cases of diabetes mellitus under treatment and 3 patients were smokers(2.4%) as shown in table 1.

Regarding complains of patients (table 2); 47 patients (38.2%) were complaining of shortness of breath, while 17 patients (13.8%) complain of palpitation and 16 patients (13%) complain of chest pain. Major of patients 25 of them (20.3%) had non specific complain (multiple complain) while 17 patients (14.7%) had other complains (abdominal pain, chest tightness, Dizziness, general weakness, and headache).

ECG was done to 114 patients, 42 patients (34.1%) had abnormal ECG in form of left ventricle hypertrophy, ischemic heart disease, tall R in V1 and bundle branch block

Echocardiography was done to 60 patients and the results as follows (table 3): 19 of them (15.4%) were normal echocardiography, 6 patients (4.8%) had congenital heart disease, and 9 patients (7.2%) had rheumatic heart disease, 5 patients (4%) with diagnosis of ischemic heart disease, while 14 patients (11.3%) had hypertensive heart disease by echo. The age of patients proved with diagnosis of rheumatic heart disease by echocardiography range between 7 to 40 years.

Eleven patients need intervention as follows: 4 patients needs diagnostic coronary angiography, 2 patients need mitral valve replacement, one patient need double valve replacement, 2 patients needs percutaneous pulmonary valvuloplasty, while one patient need percutaneous mitral valvuloplasty and one patient need closed follow up and trans-esophageal echo.

Table (1): basic criteria of patients

Male	62 /123(50.4%)
Female	61 /123(49.6%)
Hypertension	26 /123(21.1%)
Diabetes mellitus	4/123 (3.3%)
Smoker	3/123 (2.4%)

Table (2): distribution of patients and percentage according to complain

Complain	Number of patients	Percentage
Shortness of breath	47	38.2%
Chest pain	16	13%
Palpitation	17	13.8%
Non specific	25	20.3%
Dizziness	5	4.1%
Follow up	6	4.9%
Headache	2	1.6%
Chest tightness	1	0.8%
Abdominal pain	1	0.8%
Limb weakness	1	0.8%
Heart burn	1	0.8%
General weakness	1	0.8%

Table (3): numbers of patients and percentage diagnosed by echocardiography. CHD; congenital heart disease. IHD; ischemic heart disease

Echo diagnosis	Number of patients (total 60)	Percentage
CHD	6	4.8%
Rheumatic heart disease	9	7.2%
Normal	19	15.4%
Hypertension	14	11.3%
Pure Hypertension	10	8.1%
Hypertension +	2	1.6%
IHD	2	1.6%
Hypertension + valvular		
IHD	5	4%
Mitral valve prolapsed	2	1.6%
Diastolic Heart failure	2	1.6%
Systolic heart failure	1	0.8%
Valvular heart disease	2	1.6%

Discussion :

There was no studies done in Socotra regarding the prevalence of heart disease but we seen some patients who can afford to come to Mukalla (capital of Hadramout government) or to Sana`a , so this study is considered the first one regarding the pattern of cardiovascular disease in Socotra island.

Rheumatic fever (RF) is a febrile disease affecting connective tissue, particularly in the heart and joints, initiated by infection of the throat by group A beta-hemolytic streptococci. It often leads to RHD which is a crippling illness (5). A study by Carpentis et al estimated that up to 15.6 million people are affected by RHD worldwide (6). Each year, there are approximately 470,000 new cases diagnosed and 233,000 deaths attributed to RHD (7). *Al. Munibari et al.* studied 5000 school children in Sana`a schools during period between October 1997to march 1998, they found the prevalence of rheumatic heart disease 3.6per 1000 which was higher than that reported from neighboring countries (8). In our study, 9 patients of 120 patients were diagnosed by echocardiography to have rheumatic heart disease inspite of low number of sampling and we did not focus the school children as this age is common in rheumatic fever and rheumatic heart disease, as age of study by Al-Munibari between 5-18 years while in our study between 7-40 years.

Saleh H. studied pattern of RHD in Aden between January 1999 to December2003, he found 805 patients had RHD, and the age of patients ranged between 4 - 70 years but 90% of patients were under 50 years of age (9).

Regarding prevalence of rheumatic heart disease in near countries, screening of 9904 Omani school children from different regions in Oman gave a prevalence rate of rheumatic heart disease of 8/10.000 with no significant difference by sex or level of education (10).

Congenital heart disease is a structural or functional abnormality of heart or great vessels that is present at birth (11, 12).The

incidence of congenital heart disease reported in different countries is about 9/1000 (13), and the official census data in southern Yemeni governorates reports 27,200 live births per year (14).

Nine hundred and eighty seven child referred for echocardiography assessment, during the period between January 2001 to December 2005 in Aden, *Hussein K.Saleh* found 393 of 987 patients was congenital heart disease and the age of patients was from birth to 15 years (15), while in our study; we detect 6 patients of 123 were congenital heart disease and age range between 5-25 years as 2 cases had congenital pulmonary stenosis.

There was high prevalence of hypertensive patients in the island 14 patients of 123; which needs further study to know the cause. Using data from the 2nd Gulf Registry of Acute Coronary Events (Gulf RACE-2) in 2008–09 which investigated the in-hospital complications and 1-year outcome of acute coronary syndrome (ACS) in patients with systemic hypertension from 6 Gulf countries. Of 7847 consecutive patients admitted with ACS, 3746 (47.7%) had hypertension. Hypertension was more prevalent in women, in Arabs than non-Arabs and in older age groups(16).

The major limitation of this study is short time stay in the island and small sample size of patients. We recommend a big survey to detect the accurate prevalence of heart disease in the island and general practical doctors, pediatrician, nutritional specialist must included to the team and survey included all districts of the island and school children. Health organization and ministry of health should interfere to tackle the cardiovascular disease in Socotra island either by preventive or curative programs

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