

The Rheumatic Fever and Rheumatic Heart Disease Control Programme – Jamaica

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ABSTRACT

Background: Rheumatic fever (RF) and rheumatic heart disease (RHD) are significant causes of cardiovascular disease in young adults and children especially in developing countries. In 1984, the World Health Organization (WHO) and International Society and Federation of Cardiology (ISFC) initiated an International Programme for Prevention of RF/RHD in 16 developing countries, including Jamaica. The Jamaican RF/RHD National Control Programme began in July 1985.

Subjects and Method: The Control Programme promotes the primary prevention of RF/RHD through the appropriate treatment of streptococcal throat infections. Secondary prevention has been the main focus of the Control Programme by administration of benzathine penicillin injections every four weeks to RF/RHD patients. Case finding activities have included two retrospective surveys of case records of RF/RHD patients admitted to the major hospitals in Kingston and St Andrew in the period 1975–1985 (Survey A) and 1989–1995 (Survey B). These surveys provided clinical and laboratory data on RF/RHD in Jamaican patients which were documented and analysed.

Results: Records of 1079 patients were reviewed in Survey A and records of 512 patients were reviewed in Survey B. Seventy-seven per cent of 524 patients were aged 5–15 years in initial attacks of RF in Survey A and in Survey B, 82% of 119 patients were between 5 and 15 years in initial attacks. There was no significant sex difference in RF in Survey A and Survey B. A diagnosis of RF had been made in 54% of records in Survey A and 55% of records in Survey B. Diagnosis conformed to the Modified Jones criteria. Carditis occurred in 41% and 70% of RF patients, respectively in survey A and B. Polyarthrititis occurred in 73% in Survey A and 74% in Survey B. Chorea occurred in 3% of RF patients in both surveys. Erythema marginatum and subcutaneous nodules occurred rarely in both surveys. Evidence of recent streptococcal infections in RF was found in 74% and 64% in Survey A and B, respectively. Severe carditis occurred in 7% of initial attacks of RF in A and 26% in B. In RHD, mitral incompetence was the commonest valvular lesion, occurring in 82% and 68% in A and B, respectively. Rheumatic fever and rheumatic heart disease have relatively long and expensive hospital stays which are preventable by careful adherence to prevention programmes.

Conclusion: The National Control Programme for RF/RHD in Jamaica began in 1985 and deserves careful monitoring and support to reduce the burden of RF/RHD. Analysis of clinical and laboratory data obtained in the retrospective surveys conducted for case finding provides important data on RF/RHD in Jamaica.

Keywords: Rheumatic fever, rheumatic heart disease, Jamaica

Programa de Control de la Fiebre Reumática y la Enfermedad Reumática del Corazón – Jamaica

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RESUMEN

Antecedentes: La fiebre reumática (FR) y la enfermedad reumática del corazón (ERC) constituyen causas significativas de la enfermedad cardiovascular en adultos jóvenes y niños en los países en vías de desarrollo. En 1984 la Organización Mundial de la (OMS) y la Sociedad y Federación Internacional de Cardiología (ISFC) iniciaron un Programa Internacional para la Prevención de FR/ERC en 16

países en vías de desarrollo, incluyendo Jamaica. El Programa Nacional de Jamaica para el control de FR/ERC, comenzó en julio de 1985.

Sujetos y método: El Programa de Control promueve la prevención primaria de FR/ERC a través del tratamiento apropiado de infecciones estreptocócicas de la garganta la prevención secundaria ha sido el foco principal del Programa de Control mediante la administración de inyecciones de penicilina benzatinica cada cuatro semanas a los pacientes de FR/ERC. Las actividades de detección de casos han incluido dos estudios retrospectivos de historias clínicas de casos de pacientes de FR/ERC ingresados en los hospitales principales de Kingston y Saint Andrew en el periodo 1975–1985 (Estudio A) y 1989–1995 (Estudio B). Estos estudios proporcionaron datos clínicos y de laboratorio de FR/ERC en pacientes jamaicanos. Dichos datos fueron documentados y analizados.

Resultados: Se examinaron las historias clínicas de 1079 pacientes en el Estudio A y se revisaron las historias clínicas de 512 pacientes en el Estudio B. El 77% de 524 pacientes tenían entre 5–15 años de edad al inicio de lo ataques de FR en el Estudio A, en tanto que en el Estudio B el 82% de 119 pacientes tenían entre 5 y 15 años de edad al inicio de los ataques. No hubo ninguna diferencia significativa en cuanto a sexo en FR en el Estudio A y el Estudio B. Se había realizado un diagnóstico de FR en el 54% de las historias clínicas del Estudio A y el 55% de las historias clínicas del Estudio B. El diagnóstico se ajustaba a los criterios de Jones modificados. Se presentó carditis en 41% y 70% de los pacientes de FR respectivamente en el estudio A y B. La poliartritis ocurrió en 73% en el Estudio A y 74% en el Estudio B. La corea ocurrió en 3% de pacientes de FR en ambos estudios. Las manifestaciones de eritema marginatum y los nódulos subcutáneos raramente ocurrieron en ambos estudios. En el 74% y 64% de los Estudios A y B, respectivamente, se halló evidencia de recientes infecciones estreptocócicas de FR. La carditis severa ocurrió en el 7% de los ataques iniciales de FR en A y 26% en B. En la ERC, la incompetencia mitral fue la lesión valvular más común, presentándose en el 82% y 68% de A y B, respectivamente. La fiebre reumática y la enfermedad reumática del corazón tienen estadías de hospitalización relativamente largas y costosas, las cuales pueden prevenirse mediante la adhesión cuidadosa a los programas de la prevención.

Conclusión: El Programa Nacional de Jamaica para el control de FR/ERC, empezó en 1985 y requiere un monitoreo cuidadoso y apoyo constante a fin de reducir la carga de FR/ERC. El análisis de los datos clínicos y los datos de laboratorio obtenidos en los estudios retrospectivos conducidos para la detección de casos proporcionan datos importantes sobre la FR/ERC en Jamaica.

Palabras claves: Fiebre reumática, enfermedad reumática del corazón, Jamaica

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INTRODUCTION

Rheumatic fever (RF) and rheumatic heart disease (RHD) are significant causes of cardiovascular disease in young adults and children especially in developing countries. In 1984, The World Health Organization (WHO) in collaboration with the International Society and Federation of Cardiology (ISFC) initiated an International Programme for Prevention of RF and RHD in 16 developing countries in five WHO Regions: Mali, Zimbabwe and Zambia (in Africa); Bolivia, El Salvador and Jamaica (in the Americas); Egypt, Iraq, Pakistan and Sudan (in the Eastern Mediterranean); India, Sri Lanka and Thailand (in South-East Asia); and China, the Phillipines and Tonga (in the Western Pacific). The International Programme received partial funding from the Arab Gulf Fund for United Nations Development (AGFUND) until 2000 (1).

In July 1985, the Jamaican RF/RHD National Control Programme began as a collaborative effort between the Heart Foundation of Jamaica, the Ministry of Health and the Department of Child Health of The University of the West Indies.

Phase I of the Control Programme began as a pilot project in Kingston and St Andrew. After two years, the programme was extended to all parishes in Phase II. Since 1991, the programme has been run by the Ministry of Health in hospitals and Type 3 clinics throughout Jamaica. Regional Health Authorities, since their inception, have had direct responsibility for the Control Programme in the regions and provide reports to the Head Office of the Ministry of Health.

The RF/RHD Control Programme promotes the primary prevention of RF through identification and appropriate treatment of streptococcal throat infections. The main focus has been secondary prevention (of recurrences) of streptococcal throat infections and RF in persons who have been diagnosed with RF/RHD by administering four-weekly injections of benzathine penicillin. This has involved case finding, registration and surveillance of patients. Health education has been provided to patients, families and the public as well as ongoing training of health personnel. There have been two major national conferences and numerous presentations and seminars on RF and RHD. Many posters, brochures and pamphlets have been distributed.

Since the programme began, there have been two retrospective surveys of case records of patients admitted to the major hospitals in Kingston and St Andrew. Survey A was a review of records of 1079 patients admitted in the period 1975 to 1985 and was a case finding exercise at the start of the Programme. Survey B was a review of records of 512 admissions between 1989 and 1995 and was an additional case finding exercise and gave an indication of disease trends (2).

These surveys provided important data on RF/RHD in Jamaica. Survey A was conducted at the National Chest Hospital, Bustamante Hospital for Children, Kingston Public Hospital and the University Hospital of the West Indies. Survey B was conducted at the same hospitals with the exception of the National Chest Hospital.

Age at Initial Attack of Rheumatic Fever

As has been reported from other countries, most patients were between five years and 15 years of age at the initial attack.

In Survey A, 77% of 524 persons were between five and 15 years of age. In Survey B, 82% of 119 persons were between five and 15 years of age. The youngest child with RF was two years and nine months old. The three oldest patients with RF were 30 years of age. There was no difference in the occurrence of RF between males and females in initial attacks.

Diagnosis of Rheumatic Fever

Rheumatic fever had been diagnosed in 54% of records in Survey A and 55% of records in Survey B. The diagnosis conformed to the modified Jones Criteria.

Table 1: Manifestations of acute rheumatic fever

Major Manifestations	Survey A	Survey B
Carditis	41%	70%*
Polyarthritis	63%	64%
Chorea	3%	3%
Subcutaneous nodules	0.5%	0.3%
Erythema marginatum	1%	0
Minor Manifestations	Survey A	Survey B
Joint pains	80%	73%
Positive CRP/Increased ESR	79%	83%
Fever	74%	70%
Previous RHD	12%	28% **
History of RF	12%	48% **
Increased P-R interval	6%	10% **

* Statistically significant difference

** Significant differences between Surveys A and B

Evidence of Recent Streptococcal Infection in Rheumatic Fever

Records showed evidence of recent streptococcal infection in RF patients in 74% in Survey A and 64% in Survey B.

Severity of Heart Disease

Severe carditis occurred in 7% of 438 patients with initial attacks of RF in Survey A and 26% of 134 patients with initial attacks in Survey B. There was a significantly greater number of cases of severe carditis in Survey B.

Table 2: Valvular lesions in patients with rheumatic heart disease

	Survey A	Survey B
Mitral incompetence (MI)	82%	68%
Mitral stenosis (MS)	36%	46%
Aortic incompetence (AI)	30%	33%
MI and MS	26%	26%
MI and AI	23%	24%
Tricuspid Incompetence	4%	11%
MI, MS and AI	5%	6%

Mitral incompetence was the commonest lesion in patients with rheumatic heart disease in both surveys. Mitral stenosis and then aortic incompetence were next in frequency.

Cost of Hospitalization and Length of Hospital Stay

In 1995, patients admitted to the University Hospital of the West Indies had an average stay of 8.5 days. In Survey B, RF/RHD patients had an average hospital stay of 21 days at a cost of J\$105 000.00. It was estimated that the cost of hospitalizing patients with RF/RHD in Survey B was about J\$17 million per annum for the three hospitals studied. These costs would translate in 2012 to an average cost of over J\$250 000.00 for each patient admitted and a total cost of over J\$43 million annually for treating RF/RHD patients admitted to the major hospitals in Kingston and St Andrew. In the era of free healthcare in public institutions, these considerable preventable costs would be borne by taxpayers.

The International Rheumatic Fever Study Group in the report "Allergic reactions to long term benzathine penicillin prophylaxis for rheumatic fever" (3), compared the incidence of recurrent attacks of RF in patients on regular prophylaxis with the incidence of recurrence in patients who did not comply.

"Rheumatic fever recurred in 8 (0.45%) of 1790 patients while on regular prophylaxis compared with 11 (11.5%) of 96 who were not". The study provided further evidence that regular four-weekly injections of benzathine penicillin are effective in preventing recurrences of RF.

In the past two years, increasing numbers of patients have received open heart surgery for rheumatic heart disease. Recent data suggest that more careful and continuous attention needs to be paid to the RF/RHD Control Programme regionally and centrally in order to prevent first attacks and recurrences of RF, reduce the burden and severity of RF/RHD for patients and reduce the Ministry of Health expenditure for medical and surgical treatment of RF/RHD.

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