Polyarthralagia in Egyptian Children: Can it be a Sign of Acute Rheumatic Fever?

Thesis

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List of Abbreviations

Abb.	Full term
ACPA	*Anti citrullinated potien antibodies*
AHA	*American heart association*
AN	*Aschoff nodule*
ANA	*Anti nuclear antibody*
ARF	*Acute rheumatic fever*
ASOT	*Antistreptolysin o titre*
BPG	*Bezathine penicillin G*
CAMK2	*Calmodulin –dependant protein kinase type 2*
CBT	*Cognitive behavior therapy*
CRP	*C reactive protein*
D Nase B	*Anti deoxyribonucleas b*
EBV	*Epistien var virus*
ECG	*Electrocardiography*
ECHO	*Echocardiography*
ESR	*Erythrocyte sedimentation rate*
FBC	*Full blood picture*
GAS	*Group A streptococcal*
GP	*Growing pain*
HGB	*Heamoglobin*
HSP	*Henoch sholenon purpura*
IVIG	*Intravenous immunoglobin*
JDM	*Juvenile dermatomyositis*
JIA	*Juvenil idiopathic arthritis*
KD	*Kwasaki disease*
MRSA	*Methisiline resistance staph aureus*
NABG	*N-acetyl –beta-d-glucosamine*
NSAID	*Non steroidal anti inflammatory*

List of Abbreviations cont...

Abb.	Full term
OCD	*Opssesive compulsive disorder*
PANDAS	*Pediatric Autoimmune Neuropsychiatric Disorder Assosiated with Streptococcal infection*
PGALS	*Full Pediatric Gait Arm Legs Spine examination*
PLT	*Platelets*
PSRA	*Post streptococcal reactive arthropathy*
RADT	*Rapid antigen detection test*
RF	*Rheumatic fever*
RFPP	*Rheumatic fever prevention program*
RHD	*Rheumatic heart disease*
SC …	*Sydenham chorea*
SCN	*Subcutaneous nodule*
SLE	*Systemic lupus erythromatosis*
TB	*Tuberculosis*
TLC	*Total leukocytic count*
VKAM 1	*Vascular cell adhesion molecule*
WBC	*White blood cell*

INTRODUCTION

Children presenting with joint pains are a very common occurrence in any general pediatric outpatient department. About 15 % of general pediatric consultations are for myriad pains of the musculoskeletal system ***(Gedalia et al., 2002).***

History and examination are the cornerstone of diagnosis in children with joint pains. It is important to clarify the nature and site of pain (joint, muscle or bone). If joint related, it is critical to differentiate arthralgia from arthritis. The presence of joint pain alone signifies only arthralgia not arthritis. Presence of swelling, redness, restriction and/or stiffness is required to make a diagnosis of arthritis ***(Balan et al., 2016).***

The vast majority of children with joint pains have noninflammatory pains, a few have inflammatory joint disease and a rare child would have joint pains due to malignancies. Children with rheumatologic diseases can present with constitutional features, musculoskeletal manifestations, organ involvement, or a combination of the above ***(Reyhan et al., 2013).***

Acute rheumatic fever (ARF) is a leading cause of pediatric acquired heart disease amongst the Egyptian populations, mainly presenting in children aged 4-12 years. One study have shown that over a 30-year study period, there was an average of 98 new cases /year of acute Rheumatic fever

in Egypt with peaks at 1982,1986, 1987 and 1991 ***(Elamrousy et al., 2014).***

Polyarthralgia had been considered as a minor criteria for the diagnosis of acute rheumatic fever. However, in the 2015 AHA updates of the Jones criteria and after stratification of the target populations as low, medium or high risk for rheumatic fever, polyarthralgia became an independent major criteria in developing high risk populations like Egypt ***(Beaton et al., 2015).***

This new modification may propabably lead to an over diagnosis of acute rheumatic fever with an increased unjustified risk of anaphylaxis following every dose of long acting penicillin given as secondary prophylaxis. Moreover, faulty over diagnosis of ARF can also be based on a raised antistreptolysin O titer (ASOT). Egyptian children have high ULN ASOT reaching 400 IU. This has to be taken into consideration when interpreting its values in suspected ARF ***(Kotby et al., 2012).***

Antidesoxyribonuclease B – like anti-streptolysin O, is another antibody against streptococcal product, but persists at higher levels for longer period after infection with Group A β-hemolytic Streptococcus. It has a higher positivity percentage when compared to other methods of documentation for this infection in patients with this clinical manifestation ***(Breno et al., 2017).***

Aim of the Work

This study was done to screen Egyptian children with polyarthralgia for acute rheumatic fever.

Chapter 1

ARTHRITIS

Children presenting with joint pains are a very common occurrence in any general pediatric outpatient department. About 15 % of general pediatric consultations are for myriad pains of the musculoskeletal system ***(Gedalia et al., 2002).***

The majority of children with joint pains have non inflammatory pains, a few have inflammatory joint disease, and a rare child would have joint pains due to malignancies. Children with rheumatologic diseases can present with constitutional features, musculoskeletal manifestations, organ involvement, or a combination of the above ***(Reyhan et al., 2013)***.

Polyarthritis is defined as involvement of more than one joint ***(Naveed et al., 2014).***

Children with polyarthritis can be divided into acute and chronic polyarthritis. In children with acute onset of polyarthritis, systemic infections, malignancies, and acute presentations of vasculitides such as Henoch-Schönlein purpura (HSP) and Kawasaki disease are important differentials. In children with chronic polyarthritis, various categories of juvenile idiopathic arthrities, connective tissue diseases, vasculitides, and systemic diseases need to be kept in mind ***(Sawhney et al., 2016).***

An acute arthritis is usually defined as one that begins less than a week before the patient seeks medical attention. In