

OVERVIEW OF CLINICAL REPORTS ON URINARY SCHISTOSOMIASIS IN THE TROPICAL ASIA

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ABSTRACT:

Schistosomiasis, also known as bilharzia, is a parasitic disease that leads to chronic ill health. It is the major health risk in the rural areas of Central China and Egypt and continues to rank high in other developing countries. The aim of this study is to review the previous clinical reports on urine schistosomiasis. As regards schistosomiasis caused by *S. japonicum*, *S. mekongi* and *S. japonicum*-like in Southeast Asia, have been reported from different countries. However, clinical reports on urinary schistosomiasis are very rare. Steps have been taken to control schistosomiasis in the Philippines and Indonesia. However, since the *Schistosoma* spp might share the common snail intermediate host, therefore, there is a possibility in transferring of *S. haematobium* parasite. Nevertheless, Southeast Asia has the same tropical climate known to be endemic area for this parasite. In addition, currently there are a lot of Southeast Asian workers who migrate to the endemic area for work and the workers who go aboard and return might get infected. There are sporadic case reports of urinary schistosomiasis in South Asia especially in Pakistan and India. The prevalence on this disease in South area is actually higher than Southeast Asia which could be due to its geographical location. South Asia is nearer to the Middle East, the endemic area in non-tropical Asia, than the Southeast Asia. That is why the prevalence of urinary schistosomiasis has decreased in the eastern part of the South Asia, next to Southeast Asia, especially in Bangladesh.

KEY WORDS: Urinary Schistosomiasis, Tropical, Asia

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INTRODUCTION

Schistosomiasis, also known as bilharzia, is a parasitic disease that leads to chronic ill health. It is the major health risk in the rural areas of Central China and Egypt and continues to rank high in other developing countries.¹ Schistosomiasis has been recognized since the time of the Egyptian pharaohs. The worms responsible for the disease were eventually dis-

covered in 1851 by Theodor Bilharz, a young German pathologist, from whom the disease took its original name, Bilharziasis.¹ The disease is diagnosed either by the presence of blood in the urine or, in the case of intestinal schistosomiasis, by initially atypical symptoms which can lead to serious complications involving the liver and spleen.¹

The main forms of human schistosomiasis are caused by five species of the flatworm, or blood flukes, known as schistosomes: *Schistosoma mansoni*, *Schistosoma japonicum*, *Schistosoma mekongi*, *Schistosoma intercalatum* and *Schistosoma haematobium*. The last species, *Schistosoma haematobium*, causes urinary schistosomiasis and affects millions of people in the developing countries, especially in the African Continent.¹⁻² Precise data on epidemiology, morbidity, post-treatment resolution, reinfection, and resurgence of schistosomiasis could be helpful

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in establishing purposeful treatment plans for the disease in endemic populations.² We did a literature search to review and summarize the clinical reports on urinary schistosomiasis from tropical Asian countries in Southeast and South Asia.

Urinary schistosomiasis from tropical Asian countries

Southeast Asia: In Thailand, *Schistosoma japonicum* and *Schistosoma mekongi*, which cause intestinal schistosomiasis can be seen especially in the northeastern region. The presence of urinary schistosomiasis, is low. We reviewed all case reports of the urinary schistosomiasis in Thailand and only two studies^{3,4} could be detected. The first case is the worker who went back from working as miner in Africa and presented to the physician with the complaint of hematuria. He was treated as urinary tract infection but did not improve. The diagnosis was confirmed from urine sediment and histological findings. The second case is the foreigner who went to the physician at the private hospital with the complaint of prolonged intermittent hematuria and on radiography abnormal calcification was present. The diagnosis was confirmed on histology. Conclusively, the common characteristics of the two cases are a) past history of living in the endemic area, Africa, b) male subject, c) presentation as hematuria, d) middle aged (30 - 40 years old) and e) confirmation of diagnosis by histological finding. Pantongrag-Brown et al⁴ proposed that although urinary schistosomiasis never occurs in local Thai population, knowledge of the disease is still important in the present day when international traveling is quite common. As regards other countries in Indochina like, Laos, Cambodia, Vietnam and Myanmar, they have limited resources and data from these countries is usually not available. Although there are some reports on the survey on *S. japonicum-like*.^{5,6} In this area, there is no report on urinary schistosomiasis.

Only one case of urinary schistosomiasis has been reported from Malaysia. In 1992, Hung and Shekar reported an imported case of *S.*

haematobium infection presenting with haematuria and proteinuria⁷. The patient failed to respond to multiple antibiotic treatment and was successfully treated with praziquantel.⁷ Indeed, Greer et al proposed that even among a stable population at risk of Malaysian schistosomiasis the prevalence was low.⁸ They also mentioned that *S. malayensis*, a zoonotic infection in man, was unlikely to become a significant public health problem.⁸ In Singapore, there is no report of urinary schistosomiasis. There was only one case report of an 83 year-old female with *Schistosoma japonicum* infection presenting with bloody diarrhoea.⁹ From Indonesia, Izhar et al reported that schistosomiasis is limited to two very isolated areas, the Napu and Lindu valleys, in the province of Central Sulawesi.¹⁰ The disease was initially found in 1937 in the village of Tomado.¹⁰ However, at present, there is no case report of urinary schistosomiasis from Indonesia. Similarly, there was no report of urinary schistosomiasis from Brunei. In the Phillipines, the *S. japonicum* infection can be seen and documented as an important problem¹¹, but there is no case report of urinary schistosomiasis.

Conclusively, Schistosomiasis in Southeast Asia, caused by *S. japonicum*, *S. mekongi* and *S. japonicum-like*, have been reported from different countries.¹² However, clinical reports on urinary schistosomiasis are very rare. Measures to control schistosomiasis have been implemented in the Philippines and Indonesia¹². Although some *Schistosoma* species can be detected in Southeast Asia with considerable infective rate, the specific species, which causes urinary schistosomiasis has never been detected. However, since the *Schistosoma* spp might share the common snail intermediate host, therefore, there is a possibility of transferring of *S. haematobium* parasite. Nevertheless, the Southeast Asia has the same tropical climate as the known endemic area of this parasite, therefore the possibility of its presence can be strengthened. At present there are a lot of Southeast Asian workers who migrate to the endemic area for work and the workers who go aboard and return might also get infected.¹³

South Asia: In the tropical South Asia, urinary schistosomiasis is sporadically reported. Amonkar et al reported that this disease was less common occurrence though not unknown in India.¹⁴ They also reported a case of schistosoma induced squamous carcinoma of the bladder which was not a common association in India.¹⁴ There are some surveys on the intermediate host of the pathogen¹⁵ and there are also some reports on the development of diagnostic tool for urinary schistosomiasis.¹⁶ Recently Brown reported a test on Enzyme-linked immunosorbent assay (ELISA) in Gimvi village, India, using antigens derived from *S. haematobium* and *S. mansoni* adult worms¹⁶. Brown noted that the patients excreting schistosome ova in urine elicited positive ELISA titres, whereas patients who were previously positive but are no longer passing viable eggs were negative for ELISA.¹⁶ In Pakistan, the urinary schistosomiasis is also sporadic. Recently, Khalid and Mahmood noted that schistosomiasis should be included as a viable differential for hematuria in travelers in Pakistan.¹⁷ In Sri Lanka, the prevalence of urinary schistosomiasis is lower than the previously mentioned countries. The imported case is also reported.¹⁸

In conclusion there are sporadic case reports of urinary schistosomiasis in South Asia. The prevalence of this disease in South area is actually higher than Southeast Asia. One explanation is the geographical location. The South Asia is nearer to the Middle East, the endemic area in non-tropical Asia, than the Southeast Asia. The prevalence of urinary schistosomiasis has decreased in the eastern part of the South Asia, next to Southeast Asia, especially in Bangladesh.

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