



มหาวิทยาลัยมหิดล
คณะแพทยศาสตร์
ศิริราชพยาบาล

Feasibility and Adherence of 3-Month Isoniazid plus Rifampicin regimen (3HR) to Prevent Tuberculosis in Children

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Background

- **Tuberculosis (TB)** is globally concerned.¹
- **Latent tuberculosis infection (LTBI) treatment** to prevent active TB disease is the major policy to end TB.²
- **6-9 months of isoniazid monotherapy (6H, 9H)** is continuously being a standard treatment of LTBI^{3,4} but its effectiveness is limited by poor completion rate.⁵

1. WHO. Global tuberculosis report 2021. Geneva: WHO; 2021.
2. Uplekar M, et al. Lancet. 2015;385(9979):1799-801.
3. WHO. Latent tuberculosis infection: updated and consolidated guidelines for programmatic management:WHO; 2018.
4. Sterling, et al. Am J Transplant. 2020;20:1196–1206.
5. Bull World Health Organ 1982; 60(4): 555–564.



Background

- **Short course combination therapy with 3-month isoniazid plus rifampicin regimen (3HR)** is currently¹recommended for LTBI treatment and has been possibly superior to 9H due to its effectiveness, safety and well adherence²⁻⁶.
- However, this regimen **has not been used** widely in Thailand **and limited** data on adherence, safety and efficacy in Thai children.

1. WHO. operational handbook on tuberculosis: module 5: management of tuberculosis in children and adolescents; 2022.
2. Spyridis NP, et al. Clin Infect Dis. 2007;45(6): 715-22.
3. Ormerod L, et al. Arch Dis Child. 1998;78(2):169-71.
4. Rennie TW, et al. Eur Respy Journal. 2007;30(4):728-35.
5. Bright-Thomas R, et al. Arch Dis Child. 2010;95(8):600-2.
6. Van Zyl S, et al. Int J Tuberc Lung Dis. 2006;10(1):13-8.

2 episodes of TB exposure in pediatric wards during 2020-2021

Episode 1 (CCU)



Index case

Female 25 years old
HCW
Horseness 2 month
CXR- opacity at RUL
AFB- positive scanty 25 cells,
C/S- TB (susceptible to IRE)
Contagious from Feb – Jul 2020
Face mask was not strictly used



118 exposed children

Episode 2 (Oncology and general ward)



Female 25 years old
Parent
Chronic cough 5 month
CXR- opacity at RUL
AFB- positive 1+
C/S- TB (susceptible to IRE)
Contagious from May 2020 –
Jan 2021
Face mask was not strictly used



149 exposed children

Total 267 exposed children

- Contact investigation (symptoms and CXR)
- Tuberculosis preventive therapy (3HR)



Objectives

- **Primary objective**
 - Determine **feasibility, adherence** and **completion rate** of 3HR regimen in TB-exposed children in the episodes
- **Secondary objective**
 - Determine **adverse events** of 3HR
 - Determine **incidence of TB disease** (at least 1 year follow-up) in TB-exposed children who received 3HR