

Tuberculosis Prevention (IPT)

Isoniazid Preventive Therapy (IPT) for the prevention of tuberculosis in children

Prevention

Tuberculosis (TB) infection is generally classified as falling into two main categories: active TB disease, in which patients often demonstrate hallmark symptoms of coughing, fever, and fatigue; and latent TB infection, in which patients do not feel sick or present clinical symptoms. Isoniazid preventative therapy (IPT) is recommended for children diagnosed with latent TB infection (LTBI) to prevent the onset of active TB disease. Isoniazid can be given for either 6 or 9 months to cure LTBI. The preferred regimen duration for children aged 2 to 11 years old is a full 9 months of therapy. IPT reduces the risk of developing active TB infection by up to 59% in children aged 15 years or younger.

IPT for HIV/TB Co-infection

Due to the immune system suppression caused by HIV infection, conversion from latent TB infection to active TB disease is significantly more likely in people living with HIV, especially in children living with HIV in low-resource countries. People co-infected with TB and HIV are 20 to 37 times more likely to develop active TB disease in their lifetime than those without HIV. The WHO recommends that children over 12 months of age living with HIV who are unlikely to have active TB disease (not displaying symptoms) should receive a minimum of 6 months of IPT. Screening to rule out active TB in people living with HIV is essential to determine whether multi-drug therapy for active TB disease is needed or whether IPT can safely be used to treat latent TB infection.

Current Use in Low TB Burden Settings

In countries and settings with low TB incidence, it is common practice to treat individuals with a positive tuberculin skin test (TST) or positive interferon gamma release assay (IGRA) test with isoniazid for either a 6- or 9-month regimen. After a positive diagnosis from the skin test is received, chest x-ray will confirm whether the positive TB test was attributed to latent TB or active pulmonary TB, and if latent TB, the physician will prescribe a 6- to 9-month regimen of isoniazid or one of the other four WHO- and CDC-recommended prevention methods for LTBI.

Current Use in High TB Burden Settings

Many of the countries with high TB burden are also greatly burdened by HIV infection, so IPT is often used simultaneously with HIV testing and treatment. Although the use of IPT in people living with HIV has substantially increased, countries have been slow to consistently provide IPT to HIV-positive patients. False positives with the TST can be attributed in some instances to the BCG vaccine in countries where BCG administration is common, especially for children under the age of 10.

PREVENTION/TREATMENT



PREVENTION



DIAGNOSTIC



TREATMENT



GLOBAL ANNUAL DEATHS ASSOCIATED WITH PEDIATRIC TB:

	NUMBER
Children who acquire TB	at least 1,000,000
Children who die of TB	210,000

REPRESENTATIVE PRODUCTS

IPT Manufacturer Prices

MAKE	MODEL	PROCUREMENT PRICE	TECH	STATUS	NOTES
Generic	Isoniazid (10x10); box of 100 tablets—blisters	\$0.85-\$1.13	Each film-uncoated tablet contains Isoniazid 100mg	Marketed	Stop TB referenced price 2016
Generic	Isoniazid (4x24); box of 100 tablets—blisters	\$3.10	Each film-uncoated tablet contains Isoniazid 100mg	Marketed	Stop TB referenced price 2016

CHARACTERISTICS OF REPRESENTATIVE PRODUCT

	TECHNOLOGY CHARACTERISTICS	OPERATIONAL PARAMETERS	POTENTIAL OPPORTUNITIES FOR IMPROVEMENT
SKILLS REQUIRED	Intended end user	Pediatric clinician, child	Diagnosis of latent TB is essential for IPT to be prescribed correctly. People living with HIV are even more at risk for contracting active TB, so TB screening is essential for that population. Countries with a high burden of HIV/TB co-infection need to screen for TB and HIV together.
	Training required	Minutes	
	Time required per use	Minutes	
ENVIRONMENT/ INFRASTRUCTURE	Power required	None	
	Waste collection	None	
	Complementary technologies required	None	
	Temperature and storage	Store away from heat and light, 20°C -25°C	
	Maintenance	None	
COST	Device cost (approximate)	N/A	
	Cost/course (approximate)	<\$0.03/day	
OTHER	Portability	<10g	
	Regulatory	Widely approved	
	Efficacy	59% effective against conversion to active TB	

Sources:

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Hart, L. Moving Evidence into Action: Isoniazid Preventive Therapy for the Prevention of Tuberculosis in People Living with HIV/AIDS. September 2011. Available from: <https://www.fhi360.org/sites/default/files/media/documents/isoniazid%20Preventive%20Therapy%20for%20the%20Prevention%20of%20Tuberculosis%20in%20People%20Living%20with%20HIV-AIDS%20Fact%20Sheet.pdf>

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