Doctors call for change in how non-active TB in immigrant children treated

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New guidelines proposed in the March 2009 issue of the journal *Pediatrics* by researchers from the Indiana University School of Medicine and Riley Hospital for Children may have a major impact on how U.S. pediatricians and family physicians treat non-active tuberculosis (TB) in children who are immigrants, internationally adopted or refugees. The researchers say the strategy should improve the health of this growing number of children and save healthcare dollars.

An estimated one-third of the world's men, women and children have TB. Most cases are non-active ones (also called latent) in which individuals have the TB bacteria in their body but their immune system keeps it in check. While they are not actively sick they are at risk of developing active TB and spreading the disease.

Young children under age 5 with non-active TB have a higher rate of developing the active disease than adults. Estimates indicate that between 10 percent and 20 percent of these children will go on to develop active TB. To prevent this from happening, children with latent TB are treated with medication.

"As a pediatrician in the International Adoption Clinic at Riley Hospital, I see patients with non-active TB on a daily basis. These children come from around the world, many from Russia and other countries of the former Soviet Union, China and Vietnam. The children have often lived in crowded conditions in orphanages -- the type of setting where TB is especially common. These are also among the countries where many TB

cases have become resistant to the drug isoniazid. Yet standard U.S. treatment guidelines call for us to use this drug for all latent TB infections in children," said Maria Finnell, M.D., first author of the study.

Using sophisticated computer modeling, Dr. Finnell, who is a pediatrics fellow, and her Riley Hospital co-authors John C. Christenson, M.D., IU School of Medicine professor of clinical pediatrics and an infectious disease specialist, and Stephen M. Downs, M.D., IU School of Medicine associate professor of pediatrics and a Regenstrief Institute affiliated scientist, determined that treatment guidelines need to be changed so that children with non-active TB who come to the U.S. from countries with high rates of isoniazid resistance are treated with another drug called rifampin. Rifampin currently is used only in children exposed to known cases of isoniazid resistant TB.

"As we can't find the actual bacteria in patients with non-active TB, we have no way of knowing which children have the isoniazid-resistant strain. Our analysis shows that for those with latent TB who come from countries with isoniazid-resistant rates above 11 percent, treatment with rifampin would be cost-effective. Even though rifampin is a more expensive drug than isoniazid, we would lower total costs because using rifampin would prevent more cases of active TB. As an added benefit, the course of rifampin is six months rather than the nine months of therapy required for isoniazid, which may improve adherence. In parts of the world, more than 40 percent of the active TB cases are now isoniazid resistant. We need to consider where a child came from, what the rate of resistance is in that country, and tailor the medication to that," said Dr. Finnell.

According to Dr. Finnell, there has been no previous analysis of this type for pediatric non-active TB patients, although similar analyses have been done for adults. And she notes that the benefits of treating non-active TB

far exceed the minimal risk of side effect in children.

Source: Indiana University