Effective Health Care

Treatment of Tuberculosis with Pellet Implants of Rifampicin, Isoniazid, Pyrazinamide, Ethambutol Nomination Summary Document

Results of Topic Selection Process & Next Steps

- The topic *Treatment of Tuberculosis with Pellet Implants of Rifampicin, Isoniazid, Pyrazinamide, Ethambutol* does not fall within the domain of the Effective Health Care Program since pellet implants to treat tuberculosis are not an intervention currently available in the United States. No further activity will be undertaken on this topic.

Topic Description

Nominator(s): Individual physician

Nomination Summary: The nominator is interested in understanding the potential benefits of a new drug delivery model for tuberculosis (TB) treatment (i.e., drug implants) in order to improve patient adherence and ultimately, reduce the rate of multidrug-resistant (MDR) and extensively drug-resistant (XDR) TB. The nominator notes the challenges involved in treating TB, particularly within the homeless population.

Staff-Generated PICO
Population(s): All TB patients
Intervention(s): Implantable therapy with rifampin, isoniazid, pyrazinamide, ethambutol (separately or in combination)
Comparator(s): Conventional oral therapy with rifampin, isoniazid, pyrazinamide, ethambutol (separately or in combination)
Outcome(s): Patient adherence to treatment, patient compliance, prevention of drug resistant strain of tuberculosis, rate of cure, or rate of recurrence

Key Questions from Nominator: What is the comparative effectiveness of pellet implant therapy using rifampicin, isoniazid, pyrazinamide, or ethambutol versus conventional oral therapy, for improving adherence in patients with tuberculosis, particularly in populations with medication adherence concerns (e.g., homeless, migrant)?

Considerations

- The topic does not meet EHC Program appropriateness criteria. (For more information, see http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/.)

- While the rate of incidence of tuberculosis (TB) in the US has been in a steady decline since the 1950s, the global prevalence of multidrug-resistant (MDR) and extensively drug-resistant (XDR) TB is on the rise.
- It can be challenging to treat TB in vulnerable populations who, for a variety of reasons, may be unable to complete the full course of therapy. It can be difficult to track and ensure patient adherence to treatment, particularly among the homeless and migrant populations. Inappropriate completion of the treatment regimen can lead to MDR and XDR TB, which are much harder to treat in patients.
- Implant therapy is still in its infancy. Most of the available information discusses implant therapy as an emerging form of drug delivery which has the potential to increase patient compliance to treatment. It has been tested and used in a variety of other conditions (e.g., hormone replacement therapy) and is currently being tested in humans for cancer treatment.
- Although it has been tested and used in a variety of other conditions, pellet implant therapy for TB is not currently available for use in the United States. Research on the use of this technology for TB is in the early experimental phase (i.e., animal studies) and has not been approved for human trials.