ABSTRACT

**Background:** In recent past *Mycobacterium* developed resistance against both first line and the second line drugs and multi-drug resistant (MDR) and extensively-drug resistant (XDR) strains of *M. tuberculosis* are immerging all over the world including India. In addition to developing resistance, Anti-Tuberculosis drug induced hepatotoxicity, which is a serious adverse drug reaction, is one of the most difficult clinical problems. India is one of the few countries in the world that has unique wealth of medicinal plants and extensive traditional knowledge of use of herbal medicine to treat various diseases. Therefore, the present study was performed to verify the anti-mycobacterial activity of extracts from different plants viz. *Lantana camara, Ocimum sanctum, Aloe vera and Acacia senegal* against standard strain of *M. avium* and *M. tuberculosis*.

**Methods:** Water and Methanolic extracts in a concentration of 2%, 4% and 6% of *Lantana camara, Ocimum sanctum and Acacia senegal* leaves and fresh juice of *Aloe vera* leaves have been tested in vitro for their anti-mycobacterial activity against *M. avium* and *M. tuberculosis* on Lowenstein-Jensen (L J) medium. Percentage inhibition was calculated from mean reduction in number of colonies in extracts containing media, compared to media without extract (control).

**Results:** All extracts from the four plants showed the inhibitory activity against *M. avium* and *M. tuberculosis*. Against *M avium* at a extract 6% concentration in L J Medium, the percentage of inhibition of *Lantana camara* was 63 and 67 for water and Methanolic extract respectively. For same concentration water extract and Methanolic extract of *Ocimum sanctum* showed 71 and 75 percent of inhibition. Six percent Water and Methanolic extract of *Acacia Senegal* showed a 40% & 47 percent inhibition against M Avium. For the 6% gel containing media of *Aloe vera* percent inhibition was 33.
Against *M. tuberculosis* with 6% concentration of extract in L J Medium the percentage of inhibition for *Lantana camara* was 48 and 56 respectively for water and Methanolic extract. For the same concentration water and Methanolic extract of *Ocimum sanctum* san inhibition of 62 and 69 was observed. 6% Acacia senegal Water and Methanolic extract showed a 40 & 48 percent inhibition against *M. tuberculosis*. Six Percent gel containing media of *Aloe vera* showed a 56 % of inhibition.

**Interpretations and Conclusions:** Our study has shown positive results for anti-mycobacterial activity of studied plants. Other studies should be conducted using different solvents or using fractions of raw extracts to finally conclude the potential of these plants as an anti-mycobacterial treatment.

**Key Words:** *Lantana camara, M. avium, M. tuberculosis, Ocimum sanctum.*