INTRODUCTION

Plants are used medicinally in different countries and are a source of many potent and powerful drugs. A wide range of medicinal plant parts are used as raw drugs and they possess varied medicinal properties. The different parts used include root, stem, flower, fruit, twigs, exudates and modified plant organs. While some of these raw drugs are collected in smaller quantities by the local communities and folk healers for local use, many other raw drugs are collected in larger quantities and traded in the market as the raw material for many herbal industries. Although hundreds of plant species have been tested for antimicrobial properties, the vast majority of them have not been adequately evaluated. Medicinal plants are easily available, less expensive and also have no side effects. According to the World Health Organization (WHO), about 65% - 80% of the world’s population in developing countries due to the poverty and lack of access to modern medicine depend essentially on plants for their primary health care. Standardization of herbal formulations is essential in order to assess the quality of drugs, based on the concentration of their active principles. Quality evaluation of herbal preparation is a fundamental requirement of industry and other organization dealing with Ayurvedic and herbal products. Many of the plant materials used in traditional medicine are readily available in rural areas at relatively economic rates than modern medicine.

Different extracts from traditional medicinal plants have been tested. Many reports have shown the effectiveness of traditional herbs against microorganisms, as a result, plants are one of the bedrocks for modern medicine to attain new principles. In the past few years, a number of investigations have been conducted worldwide to prove antimicrobial activities from medicinal plants. The present paper aims to report the antimicrobial activity and phytochemical screening of leaves extract of *Morinda pubescens* Linn. plant.

MATERIALS AND METHOD

Collection, identification and authentication of plant

Fresh leaves of *Morinda pubescens* Linn. were collected from the Alirajpur district of Madhya Pradesh. They were authenticated by Dr. A K Jain, School of Studies in Botany, Jiwaji University, Gwalior. The collected leaves were washed thoroughly in water; shade dried and finely powdered by proper grinding of the leaves and passed through the 20# no sieve.

Bacterial Cultures

The bacteria strains used in the present study were local isolates from urine (*Escherichia coli*) and Sore swab (*Staphylococcus aureus*).

Extraction

75 gm of each powdered plant part was extracted at different temperature with petroleum ether, chloroform, ethyl acetate, ethanol, methanol and water for 48 h. The resulting mixtures were filtered and evaporated in a shaker water bath maintained at 27-30°C. The obtained dried crude extracts were collected in plastic containers and labeled appropriately.

Preliminary phytochemical screening

20 gm of the air-dried powdered plant material was extracted successively using solvents like petroleum ether, chloroform, ethyl acetate, ethanol, methanol and water for 48 h in a Soxhlet’s extractor. The extracts were then subjected to various qualitative tests using reported methods to determine the presence of various phytoconstituents. The results are shown in Table 1.
The zones of inhibitions were produced petroleum ether, chloroform, ethyl acetate, ethanol, methanol and aqueous water extract against all the test organisms. Ethanol extracts were more active than the other extracts against all the microorganisms. The zones of inhibition were ranging from 10-24.5mm in diameter. The highest zone of inhibitions (20mm) was noted in ethanolic extract against microorganisms such as S. aureus in 5mg/gm concentration.
CONCLUSION

The antibacterial effectiveness of the various extracts of *Morinda pubescens* on the tested bacterial isolates resulted within 24h of incubation in both the crude extract screening and zone of inhibition. The ethanolic extracts of the plants displayed an inhibitory potency on the tested bacterial isolates especially *Staphylococcus aureus* than other studied extracts. The plants parts though effective on all the bacterial isolates, there were variations in inhibitory potency resulting from variations in the secondary metabolites concentrations in the plants parts. It can be concluded from the study that the ethanolic extract of this plant can be very good source of antibiotics against various bacterial pathogens.

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REFERENCES