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## Safety and efficacy of liposomal amphotericin B for treatment of complicated visceral *leishmaniasis* in patients without HIV, North-West Ethiopia

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**Background & Aim:** Visceral leishmaniasis (VL) is a protozoan disease that is fatal if left untreated. The mainstay of treatment in resource limited countries are antimonials, while use of liposomal amphotericin B is reserved for treatment of complicated VL cases. The aim of this study was to assess the safety and efficacy of liposomal amphotericin B in HIV negative VL patients with complications.

**Methods:** A retrospective chart review was conducted involving records of patients admitted between January 2009 and December 2014. Baseline socio-demographic, clinical and treatment outcome data were collected. The doses of liposomal amphotericin B and adverse events related to treatment were retrieved. Categorical and continuous variables respectively were analyzed by Chi-square and Mann-Whitney U tests. A p-value of less than 0.05 was considered statistically significant.

**Results:** A total of 147 patients with severe VL were treated with liposomal amphotericin B in total dose ranges of 20 mg/kg to 35 mg/kg. In the overall treatment outcome analysis, initial cure was observed in 128 (87.1%), treatment failures in 10 (6.8%), interruptions in two (1.4%) and deaths in seven (4.8%) patients. Initial cure rate at high dose (24-35 mg/kg total dose) was 96.7% (59/61) versus 80.2% (69/86) at lower doses (<24 mg/kg); which was significantly higher (P<0.01), OR=4.56:95%, Confidence Interval (CI) =1.17-20.78). Nearly 12% of treatment failure occurred in the low dose treatment group. The common adverse events were hypokalemia in 39 cases (26.5%) and infusion related reactions in 16 (10.9%). Hypokalemia and infusion related reactions were not significantly different between the treatment groups.

**Conclusion:** In HIV negative complicated VL patients, high dose of liposomal amphotericin B was found to have high cure rate at the end of treatment. The appropriate dose for better efficacy needs to be determined. Monitoring serum potassium level is essential during treatment of VL with liposomal amphotericin B.

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## Plant made pharmaceuticals for developing countries

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Plant made biologics have elicited much attention over recent years for their potential to assist those in developing countries who have poor access to modern medicine. Vaccines and other biopharmaceuticals derived from plants are inexpensive, lack refrigeration requirements and can be produced en masse in a relatively short period of time. Pharmaceuticals developed in this fashion could be utilized for functions ranging from defense against infectious diseases that have pandemic potential, such as influenza or Ebola virus, to combating orphan diseases which are poorly funded yet remain paramount to global health in their respective endemic regions. Biopharmaceuticals have been generated via a number of plant production platforms, including stable expression in transgenic plants, suspension cell cultures and hairy roots, as well as transiently through the use of plant virus expression vector technologies. The presentation will provide an overview of plant-derived pharmaceuticals and will conclude with a projection of the impact they could have for developing countries.

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