SUMMARY

Visceral leishmaniasis, a neglected tropical disease, is a source of considerable disability and mortality of concerned populations. Due to toxic side effects and resistance to currently available drugs, it is necessary to find new compounds from plant extracts that can modulate the immune responses to infection. Therefore, the present study was carried out to test the immunomodulatory and antileishmanial efficacy of crude extracts of three traditionally used medicinal plants i.e. *Bergenia ligulata* (BLREE), *Chlorophytum borivilianum* (CBREE) and *Terminalia belerica* (TBFEE) against murine visceral leishmaniasis. Various phytochemicals like alkaloids, flavonoids, saponins, terpenes, etc were detected in these plants extracts. The IC50 was calculated against promastigote form of *L. donovani* and found to be 22.70, 28.53 and 46.85 μg/mL for BLREE, CBREE and TBFEE respectively. All the extracts were found to exhibit no signs of toxicity to HeLa cells and also exhibited LD50 > 5g/kg b.wt. The antileishmanial efficacy of plant extracts was assessed in terms of Leishman Donovan Units (LDU) on geimsa stained impression smears of liver. Maximum protection was conferred by BLREE followed by CBREE and TBFEE respectively. All the three plant extracts augmented protective Th1 type of immune responses by producing high levels of IL-12 and IFN-γ cytokines, IgG1 antibodies and enhanced DTH responses and downregulated the levels of IL-10, IL-4 cytokines, IgG2a antibodies. The plant extracts were also found to be safe as evidenced by normal liver and kidney function tests as well as normal histopathological studies of liver, kidney and spleen.