10. CONCLUSIONS

In the present study, a poorly aqueous soluble drug, PZQ was successfully incorporated in to two types of nano-particulate drug delivery systems. Out of the duo, NS were principally increased the dissolution of the PZQ in the physiological media while SLN increased the intestinal solubilization and targeted to the intestinal lymphatics and thereby avoided the first pass metabolism. The pharmacokinetic study after oral and parenteral administration of SLN in rats showed that SLN changed pharmacokinetic parameters and resulted in significant improvement in the bioavailability of PZQ. The drug entrapment efficiency was further improved by formulating binary lipid nanoparticles. The binary lipid nanoparticles showed more promising *in vitro* and *in vivo* results than single lipid core materials and thus may be used as a suitable carrier system for delivery of PZQ. Moreover, drug diffusion through hydatid cyst membrane and protoscolicidal activity was significantly enhanced by the use of lipid nanoparticles. Therefore, the results of the present study open the possibility of further investigation for in vivo cysticidal effect of PZQ using SLN. The experimental results indicate that SLN may offer a promising strategy for improving the therapeutic efficacy and reducing the dose.