



Therapeutic Potential of *Emblica officinalis* L. Fruit Extract on Ischemia Reperfusion Injury Induced Acute Renal Failure in Rat

Arunachalam MUTHURAMAN*, Shailja SOOD,
Naresh Singh GILL & Rashmi ARORA

*Rayat Institute of Pharmacy, Nawanshahr District,
Near Railmajra, Ropar-144533, Punjab, India.*

SUMMARY. The present study was designed to explore the ameliorative effect of hydroalcoholic extract of *Emblica officinalis* (HAE) on renal ischemia reperfusion (I/R) injury induced acute renal failure (ARF). Rats were subjected to administration of HAE (250 and 500 mg/kg, *p.o.* for 10 days) before one hour of the ischemia (30 min) reperfusion (24 h) process on the 10th day of experiment. For evaluating the effect of HAE on acute renal failure, Blood urea nitrogen (BUN) and creatinine (Cr) were estimated in serum sample whereas, N-acetyl β -d-glucosaminidase (NAG) was estimated in urine sample. Further, renal tissue was used to evaluate the oxidative stress markers and histopathological changes. The results demonstrated that I/R caused marked changes in various biomarker levels. However, treatment with HAE significantly attenuated these changes. Histopathological evaluation also revealed protective role of HAE on renal cortex and tubular cells. These effects clearly indicated that HAE produced renoprotective effect against I/R induced acute renal failure.

KEY WORDS: Acute renal failure, Anti-oxidant, *Emblica officinalis*, Ischemia-reperfusion.

* Author to whom correspondence should be addressed. *E-mail:* arunachalammu@gmail.com