Summary and Conclusion

Arabic gum is complex polysaccharide used as suspending agent. It has been widely used by eastern folk medicine as a restorative agent and thought to be an excellent curative agent for renal failure patients. This study was designed to compare Arabic gum with carvedilol regarding to their effects on serum urea, serum creatinine and oxidative activity in vivo. This work was done also to study Arabic gum and carvedilol effects on isolated perfused rabbit's heart, on isolated perfused rabbit's auricle and on isolated perfused rabbit's jejunum in vitro.

As regards the in vivo study, rats were used and divided into five equal groups (n=6): Control group, nephrotoxic group, nephrotoxic group treated with Arabic gum (each rat received 1.5 gm daily for 11 days (3 days before and 8 days concurrently with gentamicin) by oral route) , nephrotoxic group treated with carvedilol (2 mg/kg intrapretonial injection for 11 days (3 days before and 8 days concurrently with gentamicin) and nephrotoxic group treated with both Arabic gum and carvedilol (each rat received arabic gum 1.5 gm daily by oral route and carvedilol 2 mg/kg intrapretonial injection for 11 days (3 days before and 8 days concurrently with gentamicin)).

The induction of nephrotoxicity was done by gentamicin (80 mg/kg intrapretonial injection) for eight days. At the end of the study period, the rats were subjected to measuring serum urea, serum creatinine and MDA.

It was found that Arabic gum and carvedilol produced a significant reduction in serum urea, serum creatinine and MDA in gentamicin-induced

nephrotoxic rats. Comparing between these both drugs there is insignificant deference in their effects on serum urea, serum creatinine and MDA

Co-administration of Arabic gum and carvedilol produced a significant reduction in serum urea, serum creatinine and MDA in gentamicin-induced nephrotoxic rats. Which is more significant compared to each drug alone .

In vitro study, It was found that Arabic gum produced no effect on the force of contraction of the isolated perfused rabbit's heart. Although it decreases heart rate significantly when tested on isolated perfused rabbit's auricle and this effect was not mediated through muscarinic receptor.

On the isolated rabbit's jejunum, Arabic gum produced significant stimulation of spontaneous rhythmic contraction of jejunum and this effect was not mediated through nicotinic, muscarinic, histaminic, or serotonergic receptors.

It was found that carvedilol produced no effect neither on the force of contraction of the isolated perfused rabbit's heart nor rhythmic contraction of isolated perfused rabbit's jejunum. However it decreases heart rate significantly when tested on isolated perfused rabbit's auricle.

In conclusion, Arabic gum and carvedilol are effective and may be recommended for treatment of nephrotoxicity and prophylaxis of kidney disease due to there antioxidant effect .

Proposal for future research:

Further investigation of these promising protective effects of Arabic gum and carvedilol against gentamicin-induced renal injury may have a considerable impact on developing clinically feasible strategies to treat patients with renal failure.