SUMMARY AND CONCLUSION

In chronic renal failure there is increasing evidence to suggest that anorexia, nausea and vomiting result from disturbances of the foregut motility and control mechanisms. However, only little researches have been done on gastrointestinal motor function in those patients. In this study, it is planned to examine motor function disturbances of the esophagus as well as modulating hormonal factors especially the gastrin hormone, which is altered by renal function impairment and its effect on nutritional status of those patients represented by serum albumin.

In this study; we have 50 patients with chronic renal failure and their gastrointestinal manifestations in the form of upper abdominal distension and pain, heartburn, recurrent nausea, vomiting and anorexia.

Sixty cases will be studied and classified into three groups:

1. **Group (A)** 25 patients, 6 females and 19 males, mean age 50 years have chronic renal failure and hemodialysis treatment.
2. **Group (B)** 25 patients, 3 females and 22 males, mean age 50 years, have chronic renal failure and on conservative treatment.

Primary underlying diseases were known to be chronic glomerulonephritis in 44% (22/50), hypertension and nephrosclerosis38% (19/50) and obstructive uropathy with chronic pyelonephriris18%(9/50).

3. **Control group**, ten patients3 females and 7 males, mean age44.6 years with abnormal upper gastrointestinal manifestations but have normal renal functions.

Serum gastrin and serum albumin were examined in all groups and esophageal manometric assay was done for all groups of patients.

On manometric study of the LES, we found that most of chronic renal failure patients have high lower esophageal sphincter pressure, low percentage of relaxation of LES and high residual pressure on wet swallows. Our data showed that, there is statistical significant difference between LES residual pressure on relaxation in all CRF patients and that of control subjects being more in CRF patients. Also data show that statistical significant difference between LES percentage of relaxation in all and that of the control subjects being more in control subjects. So it could be considered that there is incomplete LES relaxation in most of cases of CRF wither on hemodialysis or not. On other hand men residual pressure in patients on hemodialysis treatment was found to be higher than that of those who were under conservative treatment but these data are statistically not significant.

In our work, distal esophageal contraction amplitude and duration are significantly higher in all CRF patients in comparison to that of control subjects. Our results show that CRF patients on conservative treatment have non-significant differences in duration of contraction and amplitude of distal esophageal contraction. CRF patients on hemodialysis have significant higher contraction amplitude and prolonged duration of contraction.

In patients with CRF under conservative treatment, there is statistically significant high percentage of uncoordinated peristalsis and there are non-significant multipeaked contractions and simultaneous contractions. This can be explained as another complication to incomplete relaxation of LES. It was suggested that esophageal outflow obstruction caused an increased incidence of failed peristalsis. In our work hypotensive peristaltic contractions and simultaneities contractions in all cases of CRF are statistically non-significant. Also it was found that the percentage of uncoordinated peristalsis was significantly high in those on conservative treatment, while it became non-significant in hemodialysis group. Our study shows that there is significant high mean amplitude of esophageal contractions and prolonged mean duration of esophageal contractions in CRF patients on hemodialysis treatment. These results are in contrast with esophageal motor abnormalities in GERD.

Our results show that on manometric examination of upper esophageal sphincter, non-significant difference was found between both groups A&B

of patients in relation to control subjects. So the foregut motility changes in chronic renal failure both under conservative treatment and hemodialysis are suggested to be the result of impaired LES relaxation in the form of incomplete relaxation. But what is the triggering factor?

Our results show a significant hypergastrinemia in patients with CRF either in-group A&B in comparison to control subject. Our data show that mean concentration of gastrin in patients (group A) on hemodialysis is higher than in those (group B) under conservative treatment but these data are not significant. Also we found that there is no correlation between basal gastrin and serum createnine in CRF (group A) on hemodialysis and (group B) under conservative treatment.

Hypergastrinemia in CRF patients is considered a result of defective clearance of gastrin, increased biosynthesis, defective processing, while helicobacter pylori contribute to this hypergastrinemia and decreased serum somatostatin level. Nature of this hypergastrinemia is according to previous researches of nonamidated –glycin extended forms four folds higher than amidated forms, but in our research, nonamidated forms are not involved in our research. In addition, elevated serum gastrin in those patients may play an important role in initiating these abnormalities by its effect on lower esophageal sphincter.

Our data found no correlation between serum gastrin level and LES pressure. Also we found no correlation present between serum gastrin and

abnormalities of blood chemistry, serum urea, and createnine, albumin, sodium, potassium and esophageal manometric abnormalities.

This research is a trial to evaluate esophageal motility abnormalities, which are present in CRF patients with high serum gastrin level and its relation to nutritional status, represented by serum albumin. In our work we found patients on hemodialysis (group A) have significant low serum albumin in comparison to control subjects. CRF patients have the same group of gastrointestinal signs: ineffective esophageal contractions, high esophageal contraction amplitude, large duration of contraction and LES incomplete relaxation as it was found in high-risk conditions in (Stacher et al, Abadie et al and willcox) studies. Hypoalbuminemia could be considered as alarming sign denoting the development of esophageal motility disorders rather than it's being a sign of mortality even in asymptomatioc patients. Also gastrin was suggested to be responsible for controlling urge to eat and therefore it can be used for weight management programs.

Conclusion: -

We found that cases those on hemodialysis and on conservative treatment are presented with parameters of incomplete relaxation of lower esophageal sphincter; high amplitude of esophageal contraction wave with increased duration of contraction and higher ratio of uncoordinated peristalsis.

So this picture of esophageal dysmotility could be considered as complication in those high-risk patients of chronic renal failure.

Where hormonal factor; hypergastrinaemia could play an important role in these abnormalities (through its constricting effect on lower esophageal sphincter).

It could participate in malnutrition as it is manifested by low serum albumin in CRF patients under hemodialysis and this condition correlates by itself with mortality.

Recommendations: -

1. Treatment of helicobacter pylori as it causes stimulation for gastrin secretion.
2. Avoid unnecessary prolonged gastric acid suppression as it causes stimulation for gastrin secretion.
3. Cases of incomplete relaxation of LES should be diagnosed and treated by drugs causing LES relaxation; including; alpha–adrenergic antagonists, beta adrenergic agonists, cholinergic antagonists, calcium channel blocker diazepam and barbiturates. Even dilatation if needed.