Cisplatin was discovered more than 40 years ago, and is still used for many different types of cancer. Its wider use has been limited by toxicities, one of which is nephrotoxicity. Early clinical manifestations of the renal effects of cisplatin include a uniformly present polyuria. Hypomagnesemia is a common complication and is likely due to a renal defect in magnesium reabsorption. Hypomagnesemia results in secondary hypocalcemia and hypokalemia. Pre-hydration with saline for a goal urine output of 3 to 4L per day, drug dosage decrease (toxicity is generally dose-related), and screening for renal abnormalities are the most accepted ways to prevent nephrotoxicity.

**MATERIALS AND METHODS**

### I.V. HYDRATION SCHEDULE

Patients in the intravenous group received hydration as follows.

1. Premedication with i.v. ranitidine 50 mg, i.v. ondansetron 8 mg and i.v. dexamethasone 8 mg.
2. i.v. Sodium chloride 0.9% 1500 ml in 1 hr 30 min
3. i.v. Cisplatin 75 mg/m2 in 500 ml NS in 1 hr
4. i.v. Mannitol 20% 100 ml in 10 min
5. i.v. Sodium chloride 0.9% 500 ml + 2 gm MgSO4 + 20 mmol KCl in 1 hr
6. i.v. Sodium chloride 0.9% 500 ml in 30 min

### ORAL HYDRATION SCHEDULE

1. Premedication with i.v. ranitidine 50 mg, i.v. ondansetron 8 mg and i.v. dexamethasone 8 mg.
2. i.v. Cisplatin 75 mg/m2 in 500 ml NS in 1 hr
3. i.v. Mannitol 20% 100 ml in 10 min
4. i.v. Sodium chloride 0.9% 500 ml + 2 gm MgSO4 + 20 mmol KCl in 1 hr
5. Oral rehydration solution (ORS) 2 liters in 4 hrs orally

### RESULTS

26 of the total patients were females (46.7%) in the I.V. group and 12 (40%) in the oral group. Males comprised of 34 patients (53.3%) in the I.V. group and 18 (60%) in the oral group.

Median age of the patients was 50 in the I.V. group and 49.5 in the oral group.

Maximum number of cases belonged to carcinoma of the esophagus and stomach which were accountable for 15% each of the total cases with carcinoma of testis forming 13.3% and ovary 11.7%.

There was a slight dip in the GFR among the patients on I.V. hydration in cycle 3 and then a rise in cycle 4 which eventually eased out by cycle 6.

There was slight rise (statistically) in the magnesium levels in both I.V. and oral groups.

Both the I.V. and oral groups showed comparable calcium levels over different cycles.

The slight dip seen in the sodium value in cycle 5 may be disregarded clinically.

Both the groups showed a slight increase (statistically) in the levels of serum potassium in cycle 5 which eased out in cycle 6.

Chloride levels in both groups stayed well within the normal range.

### CONCLUSION

- Oral hydration can be safely used in patients receiving cisplatin based chemotherapy.
- WHO certified reduced osmolality oral rehydration formula is the most suitable agent for the same.
- Usage of at least 2 liters of ORS over a period of 4 hours to be given immediately prior to the dose of cisplatin.
- All the patients receiving cisplatin based chemotherapy must be given magnesium supplements.

### BIBLIOGRAPHY