

## CARBOXYPEPTIDASE RESCUE AFTER HIGH-DOSE METHOTREXATE

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**Background:** High-dose methotrexate may cause acute nephrotoxicity. Carboxypeptidase G2 is an enzyme that hydrolyzes methotrexate rapidly to the inactive metabolites DAMPA and glutamate. The criteria that justify the use of carboxypeptidase in the hospital studied are: methotrexate plasma concentration  $>10 \mu\text{M/L}$ , 48 hours after administration or increase creatinine by 100%, 24 hours after infusion.

**Purpose:** The aim of this study was to assess the correct use of carboxypeptidase according to the criteria of the hospital and to evaluate the patient's response to treatment.

**Material and method:** Retrospective study that included patients who received carboxypeptidase in the last five years. The data collected were: diagnosis, age, doses of methotrexate and carboxypeptidase, methotrexate and creatinine plasma levels.

### Results:

80 patients were treated high dose methotrexate ( $5 \text{ g/m}^2$ )



8 patients (10%) needed a rescue with carboxypeptidase ( $50 \text{ UI/Kg}$ ) 48 after infusion

The mean age was 8.87 years (3-13)

PATIENT	METHOTREXATE LEVELS ( $\mu\text{M/L}$ )		CREATININE LEVELS (mg/dL)		
	Before carboxypeptidase	24h after carboxypeptidase	Before methotrexate	After methotrexate	24h after carboxypeptidase
1	57.27	6.39	0.47	2.54	2.66
2	56.69	3.88	0.33	2.48	2.49
3	91.25	8.37	0.69	1.50	1.50
4	29.96	5.67	0.40	2.61	2.48
5	219.09	0.77	0.50	no data	no data
6	40.48	9.44	0.80	4.01	4.73
7	51.32	6.87	0.32	1.94	1.90
8	45.49	9.23	0.42	2.21	4.33

The mean time to recovery renal function was 7.28 days (4-17) after carboxypeptidase administration.

**Conclusion:** All patients fulfilled at least one of the two criteria that justify the carboxypeptidase administration. This drug offers an alternative rapid route for methotrexate elimination. It is important the role of the pharmacist to ensure proper use of carboxypeptidase due to the high cost of the drug.