CETUXIMAB INDUCED HYPMAGNESEMIA CORRELATES WITH CLINICAL OUTCOME IN METASTATIC COLORECTAL CANCER TREATMENT

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Background: Cetuximab, an anti-epidermal growth factor receptor (EGFR) monoclonal antibody is effective in kirsten rat sarcoma viral oncogene homolog (KRAS) wild-type metastatic colorectal cancer treatment. Cetuximab induced hypomagnesaemia is an important side effect due to compromised renal magnesium retention capacity and recently has been related to cetuximab containing regimens efficacy, with controversial results.

Methods: Retrospective analysis of patients with KRAS wild-type metastatic colorectal cancer, that underwent a 3rd line palliative treatment schedule with Cetuximab/Irinotecan (CTX/IRI) association between March 2008 and September 2012. Serum magnesium levels were measured before treatment beginning and at D1 of each cycle, during the first 12 weeks. Correlations between magnesium modifications (based on the lowest magnesium level) and treatment outcome was done, including time to progression (TTP) and overall survival (OS).

Results: Included 61 patients, 61% males, with a median age of 67 years [41-79]. During the first 12 weeks of treatment 26% patients developed grade 1 hypomagnesaemia and 5% developed grade 2 hypomagnesaemia, with a median magnesium reduction in that time period of 13.7%. The patients were classified according to magnesium levels reduction during the first 12 weeks of treatment in two different sub-groups (Group A < 20% and Group B ≥ 20%) Disease control was better in Group A comparing to Group B (76% vs 25% p < 0.0001). Group A patients had also a longer TTP (7.8 and 3.7 months, p = 0.002) and a better OS (13.1 and 9.3 months, p = 0.034).

Conclusion: Our data shows a relation between Cetuximab-induced hypomagnesemia and poor response rate, TTP, and OS in metastatic colorectal cancer. Prospective studies are necessary to confirm this as an important tool in the management of KRAS wild-type metastatic colorectal cancer treatment.