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Aprepitant for treatment of refractory vomiting in a case of brain abscess

KEYWORDS: Aprepitant, treatment, intractable nausea and vomiting, non chemotherapy induced

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ABSTRACT We report a case of brain abscess whose intractable nausea and vomiting improved significantly with aprepitant, a neurokinin (NK) receptor antagonist currently licensed only for prevention of chemotherapy-induced nausea and vomiting (CINV) and postoperative nausea and vomiting (PONV). The nausea and vomiting which was refractory to most of the antiemetics showed dramatic response to three doses of aprepitant. This novel NK receptor antagonist, aprepitant has a potential role not only for prevention but also for treatment of refractory vomiting in oncology and non oncology setting.

Key Messages: Though aprepitant is widely used in oncology practice for prevention of CINV; its use requires to be explored further for treatment of refractory nausea and vomiting both in malignant and non malignant conditions.Text

Introduction: Aprepitant, neurokinin NK (1) receptor antagonist, is commonly used in oncology for the prevention of acute and delayed chemotherapy-induced nausea and vomiting (CINV). This drug has also been approved for prevention of postoperative nausea and vomiting (PONV), however it is yet not licensed for treatment of nausea and vomiting. Though aprepitant has been successfully used to treat refractory vomitting in oncology setting but to best of our knowledge, there is no literature available where in this drug has been used to treat intractable vomitting outside the oncology setting. We report the successful use of aprepitant for treatment of intractable vomiting in a case of brain abscess.

Case History: We had a 39 year old young man who presented with fever, headache, drowsiness and projectile vomiting of 10 days duration. On evaluation he was found to have brain abscess in right frontal lobe abetting the wall of right lateral ventricle (Figures 1, 2, 3: MRI brain showing brain abscess in right frontal lobe). CSF revealed a picture of purulent meningitis (Appearance: turbid, Cells:7000/dL, Predominant cell: Neutrophil, CSF sugar:10 mg/dL, CSF protein:253 gm/dL). Patient was started on broad spectrum parental antibiotics (Vancomycin 1gm BD, Ceftriaxone 2gm BD and Metronidazole 750 mg TDS). Over next 7-10 days, he showed significant clinical improvement with resolution of fever and headache but continued to have nausea and vomiting. Fundus examination revealed no papilledema and there were no features of raised intra cranial pressure (ICP) on repeat neuroimaging. Multiple antiemetic drugs namely metaclopromide, ondansetron, diphenhydramine and diazepam were tried. A trial of withdrawal of Metaclopromide for 5 days was also given without any relief in his symptoms. Finally he was given a 03 days course of oral Aprepitant (125 mg on day 1 followed by two more doses of 80 mg each on day 2 & day 3) to which he showed significant improvement.

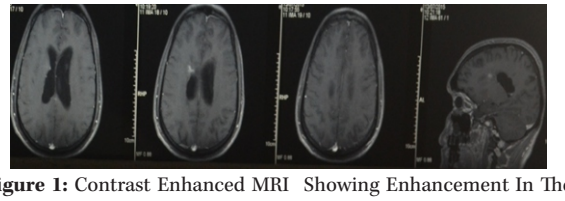

Figure 1: Contrast Enhanced MRI Showing Enhancement In The Right Frontal Lobe

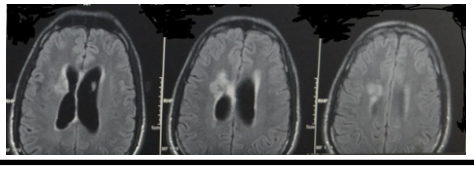

Figure 2: FLAIR Images Showing Frontal Lobe Abscess

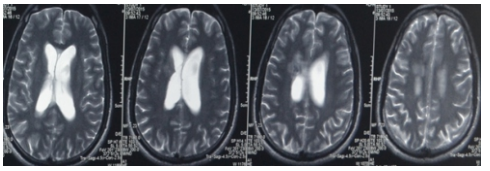

Figure 3: T2 Weighted Image Showing Frontal Lobe Abscess

Discussion: Nausea and vomiting are fairly common and particularly debilitating symptoms. The emetic stimuli act at several sites. It can be due to unpleasant thoughts or smells originating in the brain, or due to cranial nerves induced by gag reflex activation. Labyrinthine system can cause vomiting and nausea as seen in motion sickness and inner ear disorders. Gastric irritants & cytotoxic agents stimulate gastro duodenal vagal afferent nerves. Non gastric afferents are activated by intestinal & colonic obstruction and mesenteric ischemia. There are various classes of drugs used for treatment and prevention of nausea and vomiting (Table 1).[3]

Table 1: Various classes of Antiemetic drugs

Class	Example of drug	Indication
H1 Blockers	Diphenhydramine,Meclizine,Promethazine,Chlorpromazine, Olanzepine	Vestibular causes: labyrynthitis, motion sickness
Acetylcholine Receptor blockers	Scopolamine, Hyoscyamine, Olanzepine	Vestibular causes: labyrynthitis, motion sickness
D2 Receptor blockers	Peripheral: Domperidone Central: Metaclopromide, Haloperidol,Prochlorperazine, Chlorpromazine, Olanzepine	GI causes GI causes & Chemoreceptor trigger zone: drugs, toxins & metabolic
5-HT3 Receptor antagonist	Ondansetron, Granisetron,	Chemoreceptor trigger zone: drugs, toxins & metabolic
Somatostatin analogue	Octreotide	GI causes
Prokinetic agents	Motilin receptor agonists: Metaclopromide 5HT4 agonists: Cisapride, itopride	Non obstructive GI stasis
Benzodiazepine	Diazepam	Cortex causes (raised ICP, metastasis, meningeal irritation, migraine, pseudotumor cerebri, haemorrhage/ infarction, anxiety, pain)
Corticosteroids	Prednisolone, Dexamethasone	Cortex causes

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NK1 receptor antagonist	Aprepitant	Cortex causes & Chemoreceptor trigger zone: drugs, toxins & metabolic
Cannabinoid analogue	Dronabinol	Cortex causes

Aprepitant is an NK1 receptor antagonist. It has been proven to be very useful in prevention of CINV. Repeated dosing with aprepitant over multiple cycles of chemotherapy is generally well tolerated with minimal reported side effects. Fahler J et a demonstrated the role of aprepitant in treatment of nausea due to gastroparesis. Linh Tran et al reported as case series of 110 patients where aprepitant was used for treatment rather than prevention of uncontrolled delayed nausea and vomiting associated with preparative regimens in stem cell transplantation. In 2014 Lowery L reported the use of long term use of aprepitant in treatment of refractory nausea and vomiting in a cancer patient. Though the literature is available for the use of aprepitant in treatment of refractory nausea and vomiting due to chemotherapy; to best of our knowledge there is no documented report of use of this drug in treatment of refractory nausea and vomiting due to other causes. We used aprepitant in our patient after we have exhausted all the options and the patient was miserable because of intractable nausea & vomiting. We found prompt and excellent results with this drug.

References:

1. Dando TM, Perry CM. Aprepitant: a review of its use in the prevention of chemotherapy-induced nausea and vomiting 2004; 64: 777-94.
2. Curran MP, Robinson DM. Aprepitant: a review of its use in the prevention of nausea and vomiting. Drugs 2009; 69:1853-78.
3. Gordon J. Wood, Joseph W. Shega, Beth Lynch ,Jamie H. Von Roenn. Management of Intractable Nausea and Vomiting in Patients at the End of Life. JAMA 2007; 298:1196-1207.
4. F. Roila, J. Herrstedt, M. Aapro, R. J. Gralla, L. H. Einhorn, E. Ballatori et al.Guideline update for MASCC and ESMO in the prevention of chemotherapy-and radiotherapy-induced nausea and vomiting: results of the Perugia consensus conference. Annals of Oncology 2010; 21: 232–43.
5. Basch E, Prestrud AA, Hesketh PJ, Kris MG, Feyer PC, Somerfield MR, et al. Antiemetics: American Society of Clinical Oncology clinical practice guideline update. Journal of Clinical Oncology 2011; 29: 4189–98.
6. De Wit R, Herrstedt J, Rapoport B, Carides AD, Guoguang-Ma J, Elmer M et al. The oral NK(1) antagonist, aprepitant, given with standard antiemetics provides protection against nausea and vomiting over multiple cycles of cisplatin-based chemotherapy: a combined analysis of two randomised, placebo-controlled phase III clinical trials. Eur J Cancer 2004; 40: 403-10.
7. Fahler J, Wall GC, Leman BI. Gastroparesis-associated refractory nausea treated with aprepitant. Ann Pharmacother 2012; 46 : 38.
8. Lowery L, Andrew I, Gill S1, Lee M. The use of aprepitant in a case of refractory nausea and vomiting. Palliat Med 2014 ; 28: 990-91.