Folfox encephalopathy: A rare case series

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Dear Editor,

Encephalopathy is a rare and usually reversible toxicity following FOLFOX 4, a well-established and well-tolerated chemotherapeutic regimen for gastrointestinal cancers. We report two cases of encephalopathy occurring after FOLFOX4 chemotherapy presented with confused mental status and recovered completely.

Case Report 1

A 37-year-old woman diagnosed with carcinoma colon. with Krukenbergs tumor was started on FOLFOX 4 regimen. During infusion of 5-flourouracil (FU), the patient developed severe headache, intractable vomiting. Subsequently, she became drowsy, developed altered sensorium, and aphasia. She also developed bilateral ptosis, hypertension. Magnetic resonance imaging (MRI) was done which was suggestive of acute toxic encephalopathy [Figure 1]. Toxic and metabolic screen was negative. An electroencephalogram showed a diffuse slowing of waves. Two-dimensional (2D) echo showed ejection fraction of 40%, compared to baseline of 58% before starting chemotherapy. The patient was started on intravenous methyl prednisolone, lactulose enema, hydration, and oxygen support. After 7 days, her ptosis and sensorium gradually improved but improvement in speech from incomprehensible sounds through monosyllable speech to normal speech took about 14 days. MRI and 2D echo at the time of discharge were normal.

Case Report 2

A 55-year-old patient of carcinoma esophagus, on disease progression was started on FOLFOX-based chemotherapy. She tolerated the first three cycles of chemotherapy fairly well. However, on 5th day of cycle four, she presented to emergency room with the complaints of altered sensorium and hypertension. Investigations revealed increased creatinine, decreased left ventricular ejection fraction (27%). An MRI brain was suggestive of acute toxic encephalopathy [Figure 2]. She was treated with antihypertensives and other supportive

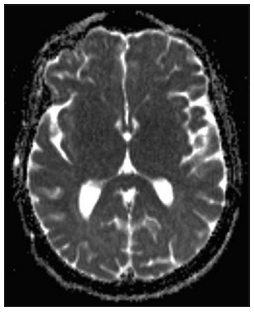

Figure 1: Case 1: Diffusion-weighted magnetic resonance imaging showing diffusion restriction in bilateral subcortical white matter

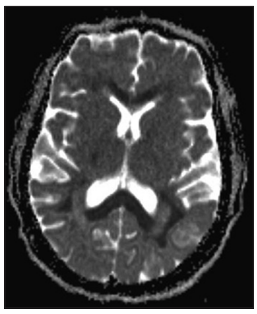

Figure 2: Case 2: Bilateral symmetrical cerebral white matter diffusion restriction

care. Gradually, her kidney function tests normalized, and her sensorium normalized within 72 hours.

Discussion

Encephalopathy can occur as an adverse effect of FOLFOX regimen in 5.7%.[1] This can be of three different types. They are posterior reversible encephalopathy, Wernicke's encephalopathy, and hyperammonemic encephalopathy.[2,3] It is the diagnosis of exclusion.

When 5-FU-induced encephalopathy is suspected, the immediate step is to stop 5-FU infusion. Laboratory tests include but not limited to serum electrolytes, serum ammonia levels, kidney, and liver function tests. MRI is the imaging modality of choice.[4]

In most cases, patients recovered completely after supportive treatment. Our patient was treated with intravenous methyl prednisolone, hydration, branched chain amino acid infusions, and lactulose enema.

Conclusion

Removal of the cytotoxic drug is usually recommended once encephalopathy occurs. Early diagnosis and treatment play a pivotal role in the management of FOLFOX-induced encephalopathy as it is a reversible condition with good supportive care.

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Conflicts of interest

There are no conflicts of interest.

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