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Focus on Fotemustine.

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Abstract

Fotemustine is a cytotoxic alkylating agent, belonging to the group of nitrosourea family. Its mechanism of action is similar to that of other nitrosoureas, characterized by a mono-functional/bi-functional alkylating activity. Worth of consideration is the finding that the presence of high levels of the DNA repair enzyme O6-methylguanine-DNA-methyltransferase (MGMT) in cancer cells confers drug resistance. In different clinical trials Fotemustine showed a remarkable antitumor activity as single agent, and in association with other antineoplastic compounds or treatment modalities. Moreover, its toxicity is generally considered acceptable. The drug has been employed in the treatment of metastatic melanoma, and, on the basis of its pharmacokinetic properties, in brain tumors, either primitive or metastatic. Moreover, Fotemustine shows pharmacodynamic properties similar to those of mono-functional alkylating compounds (e.g. DNA methylating drugs, such as Temozolomide), that have been recently considered for the management of acute refractory leukaemia. Therefore, it is reasonable to assume that this agent could be a good candidate to play a potential role in haematological malignancies.

PMID: **17310834** [PubMed - indexed for MEDLINE]

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