Drugs

PEER-REVIEWED FEATURE

Mirvetuximab Soravtansine: Adis Evaluation

Key Points

- A FRα directed antibody and microtubule inhibitor conjugate being developed by ImmunoGen for the treatment of FRα expressing cancers
- Received accelerated approval on 14 November 2022 in the USA
- Approved for use in adult patients with FRα positive, platinum-resistant epithelial ovarian, fallopian tube or primary peritoneal cancer who have received 1-3 prior systemic treatment regimens

Summary

Mirvetuximab soravtansine (mirvetuximab soravtansine-gynx; Elahere™) is an antibody-drug conjugate (ADC), which is comprised of a folate receptor α (FRα) directed antibody conjugated to a microtubule inhibitor DM4 via a cleavable linker. The ADC is being developed by ImmunoGen for the treatment of FRα expressing cancers.

Upon its high affinity binding to FRα, mirvetuximab soravtansine undergoes receptor-mediated internalization and subsequent lysosomal degradation, resulting in the release of DM4-containing cytotoxic catabolites. DM4 disrupts microtubule network within the cell, which leads to cell cycle arrest and apoptotic cell death. The catabolites may also diffuse across the cell membrane and kill neighbouring cells (bystander killing), enabling mirvetuximab soravtansine to be active against tumours with heterogeneous expression of FRα.

On 14 November 2022, mirvetuximab soravtansine received US FDA accelerated approval for treatment of adult patients with FRα positive, platinum-resistant epithelial ovarian, fallopian tube or primary peritoneal cancer, who have received 1–3 prior systemic treatment regimens; continued approval for this indication is contingent upon the verification of its clinical benefit in a confirmatory trial.

Mirvetuximab soravtansine has also been explored for the treatment of FRα expressing endometrial cancer and triple negative breast cancer.