Trimethoprim Sulfamethoxazole

Wang et al. conducted a randomized controlled trial, double blind study, placebo controlled study during a 30-month period to determine whether sulfamethoxazole and trimethoprim would decrease the incidence of infections occurring after ventriculoperitoneal shunt surgery. Of the 120 patients who completed the study according to protocol, 55 received sulfamethoxazole and trimethoprim and 65 received placebo. The incidence of CSF infection in the group receiving sulfamethoxazole and trimethoprim (4/55) was similar to that in the control group (5/65). There was a trend toward earlier identification of infections in the sulfamethoxazole and trimethoprim group (mean, 24.5 days) compared with the control group (mean, 47 days). There was no difference between infected and uninfected patients with respect to frequency of purported risk factors for infection, including history of shunt infection, history of recent myelomeningocele repair, and type and duration of shunt surgery. The incidence of shunt malfunction was similar in uninfected patients receiving antibiotic prophylaxis (18/51) compared with that of patients receiving placebo (23/60). They did not find that the perioperative use of sulfamethoxazole and trimethoprim reduced the incidence of shunt infection or malfunction [1].

Indications

Brain nocardiosis is a serious opportunistic infection with high mortality. It exists more common in the immunocompromised hosts than the immunocompetent patients. Trimethoprim-sulfamethoxazole (TMP-SMZ) has been mostly considered as the choice of the medical treatment.

Complications

Menger et al. first report a trimethoprim-sulfamethoxazole potentiating coagulopathy leading to any form of intracranial hematoma.

A 62-year-old female developed a bone marrow biopsy confirmed diagnosis of aplastic anemia secondary to administration of trimethoprim sulfamethoxazole following a canine bite. She then developed a course of waxing and waning mental status combined with headache and balance related falls. CT imaging of the head illustrated a 3.7 cm × 6.6 mm left frontal subdural hematoma combined with a 7.0 mm × 1.7 cm left temporal epidural hematoma.

Aplastic anemia is a rare complication of the administration of trimethoprim-sulfamethoxazole. Thrombocytopenia, regardless of cause, is a risk factor for the development of spontaneous subdural hematoma. Given the lack of a significant traumatic mechanism, this subset of subdural hematoma is more suitable to conservative management [2]

1)
Wang EE, Prober CG, Hendrick BE, Hoffman HJ, Humphreys RP. Prophylactic sulfamethoxazole and trimethoprim in ventriculoperitoneal shunt surgery. A double-blind, randomized, placebo-controlled trial. JAMA. 1984 Mar 2;251(9):1174-7. PubMed PMID: 6363740.
2)
Menger RP, Dossani RH, Thakur JD, Farokhi F, Morrow K, Guthikonda B. Extra-Axial Hematoma and Trimethoprim-Sulfamethoxazole Induced Aplastic Anemia: The Role of Hematological Diseases in Subdural and Epidural Hemorrhage. Case Rep Hematol. 2015;2015:374951. doi: 10.1155/2015/374951. Epub 2015 Jun 23. PubMed PMID: 26199768; PubMed Central PMCID:

PMC4493288.