

ABSTRACT

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Effectiveness and Safety of Pneumocystis Pneumonia Prophylaxis for Patients Receiving Temozolomide Chemoradiotherapy.

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BACKGROUND: Malignant gliomas are treated with temozolomide chemoradiotherapy. Because pneumocystis pneumonia (PCP) can occur in patients receiving temozolomide, the product monograph recommends PCP prophylaxis during temozolomide chemoradiotherapy. Not all neuro-oncologists follow these recommendations, though.

METHODS: We performed a population-based retrospective cohort study of glioma patients undergoing temozolomide chemoradiotherapy 2005 to 2019 in Ontario, Canada. A propensity score model was used to predict the use of PCP prophylaxis. We compared the risk of PCP within 90 days of starting radiotherapy with versus without PCP prophylaxis using inverse probability of treatment weighting (IPTW). We also examined overall survival, hospitalizations, and myelosuppression.

RESULTS: There were 3225 patients included in the cohort (648 received antibiotics and 2434 did not). Only 18 patients developed PCP within 90 days of therapy. The IPTW-adjusted absolute risk reduction in PCP with antibiotics was 0.0035 (95% CI -0.0013-0.0083), number needed to treat: 288. Neither overall survival nor hospitalization count differed between the groups. The number needed to harm by causing grade 3/4 neutropenia was 39.

CONCLUSIONS: In regions (like Ontario) where PCP is rare, routine PCP prophylaxis with trimethoprim-sulfamethoxazole should not be offered, since the harms may outweigh the benefits.

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