Second Malignancies in Patients Treated for Ewing Sarcoma: A Systematic Review
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Opportunity

- Over the past 30 years, there has been a significant improvement in the survival rate for children and adolescents diagnosed with Ewing sarcoma.
- This improvement in outcome is a result of serial refinement and intensification of the chemotherapy regimens now routinely used to treat the disease. This treatment intensity is associated with a risk of second malignancies.

Aims:
1. To describe the types and incidence of second malignancies in patients with Ewing sarcoma.
2. To describe overall survival rates of patients with Ewing sarcoma who develop a second malignancy.
3. To describe changes in reported incidence rates in second malignancy in patients with Ewing sarcoma over time as treatment paradigms have changed.
4. To describe potential clinical and therapy-related predictors of second malignancies in patients with Ewing sarcoma.

Approach

- 54 studies were included in the final review
- Studies were identified by searching PubMed, Google Scholar, Ovid, and Cochrane Library.
- Search strategy used systematic approach and involved using one diagnosis term and one topic name per search. For example, entering “Ewing sarcoma” and “SMN” in one search, then “Ewing sarcoma” and “secondary cancer” in the next search, and so on. This process was repeated for all combinations of diagnosis names and topic names and across all databases.
- GRADE (The Grading of Recommendations Assessment, Development and Evaluation) was used to evaluate all studies.

Results

- The unique feature about this project is that it is the first to attempt a systematic review of Ewing sarcoma and second malignancies in relation to treatment regimens.
- This review will provide treating clinicians and survivorship specialists in this field with comprehensive and current data on second malignancies.
- This is a project of importance because there is currently little research done on the risks of treatment that patients with Ewing sarcoma undergo. There is also questions and controversy surrounding whether patients with Ewing’s are at a higher risk of secondary cancers compared to other childhood cancers. Results from this study may help clarify whether there is an association between treatment for Ewing sarcoma and the development of second malignancies. If a relationship is determined, this will then draw attention to the need for further research on safer treatment regimens and therapies specific to Ewing’s.

Impact

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