

Adolescents have a better overall survival when treated in pediatric oncology centers?

Source: Emmanuel Desandes, Laurence Brugieres, Valérie Laurance, Claire Berger, Justyna Kanold, Isabelle Tron, Jacqueline Clavel, Brigitte Lacour. Survival of adolescents with cancer treated at pediatric versus adult oncology treatment centers in France. 21 September 2016. DOI: 10.1002/psc.26326.

The study was conducted at the French National Registry of Childhood Solid Tumor, University Hospital Nancy, in France. It observed adolescent patients (15-19 years of age), living in one of the six French administrative regions, diagnosed with any type of cancer or with Central Nervous System tumor between January 1, 2006, and December 31, 2007.

Each patient's data was collected from their medical records, and included gender, age at diagnosis, type of cancer, time to diagnosis, time to start the treatment, management in the context of a multidisciplinary decisional approach, inclusion in clinical studies and the type of cancer treatment center (adult or pediatric). The initial time was the date of the diagnosis and the final time was considered the death event. The length of follow-up ranged from 0 to 84 months, averaging 69 months.

Several previous studies have shown that adolescents and young adults treated at a pediatric oncology center have better survival outcomes than those treated at an adult oncology facility. The objectives of the study were to identify which factors influence the access to each type of care (adult and pediatric) and which determine the effect of the treatment center on survival rates.

Along two years of study, 594 patients aged 15-19 years were diagnosed with cancer. Of this total, 33% were managed at a pediatric center and 67% at an adult center. The study shows that younger patients were more likely to be treated at a pediatric center, while older patients were more likely to be treated at an adult center.

Adolescents with sarcoma or leukemia were more likely to be treated at a pediatric center, while patients with carcinoma/melanoma or germ-cell tumor were more likely to be treated at an adult center. The proportional of metastatic tumors and intracranial or intraspinal embryonal tumors (including tumors associated with poor outcomes) was higher for patients treated at pediatric centers than those treated at adult centers.

The proportion of males and females was the same. Adolescents with central nervous system tumor managed at an adult center had a longer time to diagnosis. For all cancers taken together, no differences were observed for time to treatment. However, adolescents with leukemia and lymphoma had a shorter time to treatment when they were treated at a pediatric center. Management decisions, especially the decision to initiate treatment, were taken by a multidisciplinary team in 53,9% of cases (the percentage was higher for patients treated at pediatric centers). Adolescents treated at pediatric centers were more frequently included in clinical studies.

At the end of the follow up, 107 adolescents (18%) died on an average rate of 22 months (between diagnosis and death). For all cancers of any site, the overall survival was 94,1% at 1 year and 81,9% at 5 years. High 5-year overall survival was observed for Germ cell tumor, carcinomas and melanomas, Hodgkin lymphomas, central nervous system tumors, and Non Hodgkin lymphoma. Low 5 year overall survival was observed for malignant bone tumors, acute myeloid leukemia, and soft tissue sarcomas.

Unlike previous studies, the article shows that the overall survival rates for adolescent patients diagnosed with any kind of cancer treated at a pediatric center or adult center did not differ. The 5-years overall survival in adolescents has improved from 72% during the 1988-1997 period to 81,2% during the study period.

Commentary by: Luiza Feuillatey Albagli, MD.
Pediatric Hematologist, Master Student at IPPMG/UFRJ.

The better survival rates over time probably can be justified by the improvement of chemotherapy, the new technologies and a more prepared intensive care.

In this study, patients were not stratified by the prognostic risk; they were heterogeneous in relation to the risk classification. Therefore, the chance of death was not the same for all the patients, even the ones with the same cancer. This may disrupt the results, because if the majority of patients with worse prognosis were treated at the pediatric center, the overall survival of this treatment center would be lower. Besides that, the relatively small number of patients (594 cases) over a short period of study (2006-2007), limited the power of the analysis.

Although the study has not covered all the country, 41% of the whole country is a good sample. The time of the follow up is adequate because the average was 69 months (5,7 years) and the authors want to see the overall survival in 5 years.

This study was very important because adolescents are a special group in all the types of cancer, since they do not have special treatment protocols as children and adults have. In general, they have a worse prognosis compared with children and they can be treated in pediatric or adult oncology centers. We must therefore give special attention to this group, by conducting more studies to understand its peculiarities and to find the best treatment.

References

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