J Korean Med Sci. 2018 Oct 8;33(41):e269
https://doi.org/10.3346/jkms.2018.33.e269
eISSN 1598-6357·pISSN 1011-8934

JKMS

Editorial

Solid Tumors in Children and Adolescents

Jun Ah Lee

Department of Pediatrics, Korea Cancer Center Hospital, Seoul, Korea

▸ See the article "Treatment Outcomes in Children and Adolescents with Relapsed or Progressed Solid Tumors: a 20-year, Single-Center Study" in volume 33, e260.

Received: Sep 5, 2018
Accepted: Sep 7, 2018

Address for Correspondence:
Jun Ah Lee, MD, PhD
Department of Pediatrics, Korea Cancer Center Hospital, 75 Nowon-ro, Nowon-gu, Seoul 01812, Korea.
E-mail: junahlee@kcch.re.kr

ORCID iDs
Jun Ah Lee
https://orcid.org/0000-0003-3310-9566

Disclosure
The author has no potential conflicts of interest to disclose.

Cancer is the major cause of death in children and adolescents.[1] According to the 2015 Korea Central Cancer Registry data, 1,353 children and adolescents (< 18 years) were diagnosed with cancer.[2] Solid tumor comprises almost half of the cancer cases, with brain tumor being the most common tumor type.[2] Solid tumors in children and adolescents are different from those of adults in clinical features and diversity of cellular origins.[3] In adults, cancer rates tend to increase rapidly with increasing age. However, incidence pattern of childhood solid tumor follows an age-specific pattern.[1] In early childhood, embryonal type solid tumors are common, such as retinoblastoma, neuroblastoma, hepatoblastoma, Wilms tumor, and medulloblastoma.[1] In adolescents, solid tumors often arise from bone and soft tissues (osteosarcoma, Ewing sarcoma), germ cells (germ cell tumor) and epithelial cells (thyroid carcinoma).[1]

Development of risk-oriented therapies and supportive care has greatly improved the survival of children and adolescents with cancer.[4] In Korea, the 5-year survival rates were improved from 54.6% in 1995 to 82.9% in 2015.[2] As in adult cancers, treatment of children and adolescents with solid tumor adopts multidisciplinary approach comprising curative surgery, chemotherapy, and radiotherapy. The best chance of cure lies in the initial diagnosis of cancer, and treatment of progressing or recurrent tumor remains challenging. For pediatric solid tumors, 20%–40% of patients succumb to disease.[2] Numerous attempts have been made to improve the prognosis of these patients, including high-dose chemotherapy (HDCT).[5] For embryonal type solid tumors, HDCT treatment approach improved the survival of some patients.[5] However, the prognosis of relapsed/progressed pediatric solid tumor is still unfavorable.

The improvement in survival of children with cancer could be achieved through the understanding of tumor biology and prospective clinical studies. However, progress is lagged in solid tumors of children and adolescents. There might several reasons; small number of patients, diversity of tumor types, and limited resources. Collaborative group studies are required to overcome these limitations. In North America, the Children's Oncology Group (COG) Every Child Project supports clinical and biologic research for solid tumors and provides status update for patients treated at each COG institutions.[3] The Korean Society of Pediatric Hematology and Oncology has recently initiated nationwide, multi-institutional

prospective clinical studies for various solid tumors. To design clinical trials, background data are necessary to help identify potential candidates for novel therapies. In this *Journal of Korean Medical Science* issue, Cho et al.[6] report the treatment outcomes of children and adolescents with relapsed or progressed solid tumors. Given the scarcity of reports regarding the clinical features and outcome of relapsed/progressed pediatric solid tumors, their valuable data could be used in designing future clinical trials.

REFERENCES

1. Ward E, DeSantis C, Robbins A, Kohler B, Jemal A. Childhood and adolescent cancer statistics, 2014. *CA Cancer J Clin* 2014;64(2):83-103.
   PUBMED | CROSSREF
2. National Cancer Center. *Annual report of cancer statistics in Korea in 2015*. Sejong, Korea: Ministry of Health and Welfare; 2017.
3. Stewart E, Federico S, Karlstrom A, Shelat A, Sablauer A, Pappo A, et al. The childhood solid tumor network: a new resource for the developmental biology and oncology research communities. *Dev Biol* 2016;411(2):287-93.
   PUBMED | CROSSREF
4. Hudson MM, Link MP, Simone JV. Milestones in the curability of pediatric cancers. *J Clin Oncol* 2014;32(23):2391-7.
   PUBMED | CROSSREF
5. Zhang WL, Zhang YI, Zhi T, Huang DS, Wang YZ, Hong L, et al. High-dose chemotherapy combined with autologous peripheral blood stem cell transplantation in children with advanced malignant solid tumors: a retrospective analysis of 38 cases. *Oncol Lett* 2015;10(2):1047-53.
   PUBMED | CROSSREF
6. Cho HW, Lee JW, Ma Y, Yoo KH, Sung KW, Koo HH. Treatment outcomes in children and adolescents with relapsed or progressed solid tumors: a 20-year, single-center study. *J Korean Med Sci* 2018;33(41):e260.
   CROSSREF

https://doi.org/10.3346/jkms.2018.33.e269