

# Progress and trends in pediatric hematopoietic cell transplantation in Central-East European countries

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In this issue, an interesting report on pediatric hematopoietic stem cell transplant activity is presented [1]. The survey involved nine countries of Central-East Europe and compared the modification of infrastructures (number of centers and number of beds) and activity (number of autologous and allogeneic transplants) that occurred between the years 2013 and 2018. An increase of 25.9% of transplant activity was recorded in the interval time of 5 years, especially in countries such as Slovenia, Slovakia, Romania, Poland, and Croatia despite a limited increase of new centers or transplant beds. Other countries, such as Romania and Ukraine, despite recent improvements, have still an insufficient transplant activity compared to their target population.

This study highlights the improvement of Central-East countries in achieving the modern standard for hematopoietic cell transplant and allows to put the basis for planning the future.

Many thousands of patients underwent hematopoietic stem cell transplant every year, the number being increased year by year due to the extension of age limit to the elderly and to the multiplication of indications [2]. In general, the transplant capacity of each country is related to the richness of country (average per capita income), type of health assistance (public vs. private vs. mixed system), investment in scientific research, and specialist education. Therefore, politics and rules can make differences in the same geographical macro-area in terms of access to the type of health treatments.

What is the target number of transplant beds that each country should plan for the future? Considering the Western European standard of at least 30 transplants per million of the population to define a country with a high transplant activity, the median annual incidence of pediatric cancers of 150 new cases per million of the population under 14 age/year, and a median length of hospital admission of 50–60 days/transplant per year, one can forecast a minimum requirement of four transplant beds per million of the pediatric population. Moreover, hematopoietic stem cell transplant is a complex activity and its success relies on a multidisciplinary approach that includes high-quality performances for HLA tissue typing, blood banking and pharmacy services, cryopreservation and graft manipulation, microbiological and imaging diagnostics, and the availability of 24-h medical and nursing specialized assistance. All these activities must be well organized and subjected to the control of accredited quality health organizations.

Least but not the last, the national and international collaboration within

registries and scientific associations is fundamental to make public and transparent the center activity and to favor the comparison of transplant outcomes with other centers.

In conclusion, the transplanted patient is only the spike of an iceberg that underlies many hidden but essential tasks. The real challenge for the future is to let understand to executives, managers, leaders that performing transplant is a way to improve the quality of all health systems, either at the local hospital or at a national level.

**Authors' contributions**

SC – the only author.

**Conflict of interest**

None.

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None.

**Ethics**

The work described in this article has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans; EU Directive 2010/63/EU for animal experiments; and Uniform requirements for manuscripts submitted to biomedical journals.

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