UNIVERSITY OF LATVIA

79th International Scientific Conference of the University of Latvia

Assessment of exposure from paediatric head CT procedures

Šiukšterytė Monika[1], Gricienė Birutė[1]

[1] Vilnius University, Faculty of Medicine, Vilnius, Lithuania

- **Background**. Children are sensitive to ionizing radiation, therefore it is important to monitor and optimize radiation exposure during CT procedures. A limited number of hospitals has published data on exposure evaluation and local diagnostic reference levels (DRLs).

- **Aim**. To evaluate exposure of paediatric head CT scans, estimate local diagnostic reference levels for head CT examinations and compare them with national and European DRLs.

- **Methods**. Scan parameters of single-phase CT examinations of the head were collected. Relationships between dose parameters and patients' age were evaluated. Patients were grouped by age (<1, 1–5, 5–10, 10–15 and 15–18 years). Local age-based DRLs set as the 3rd quartile of the median dose-length product were calculated.

Research Results

- Data was collected from 596 paediatric head CT examinations.

Fig. 1. Comparison of local and national DRLs

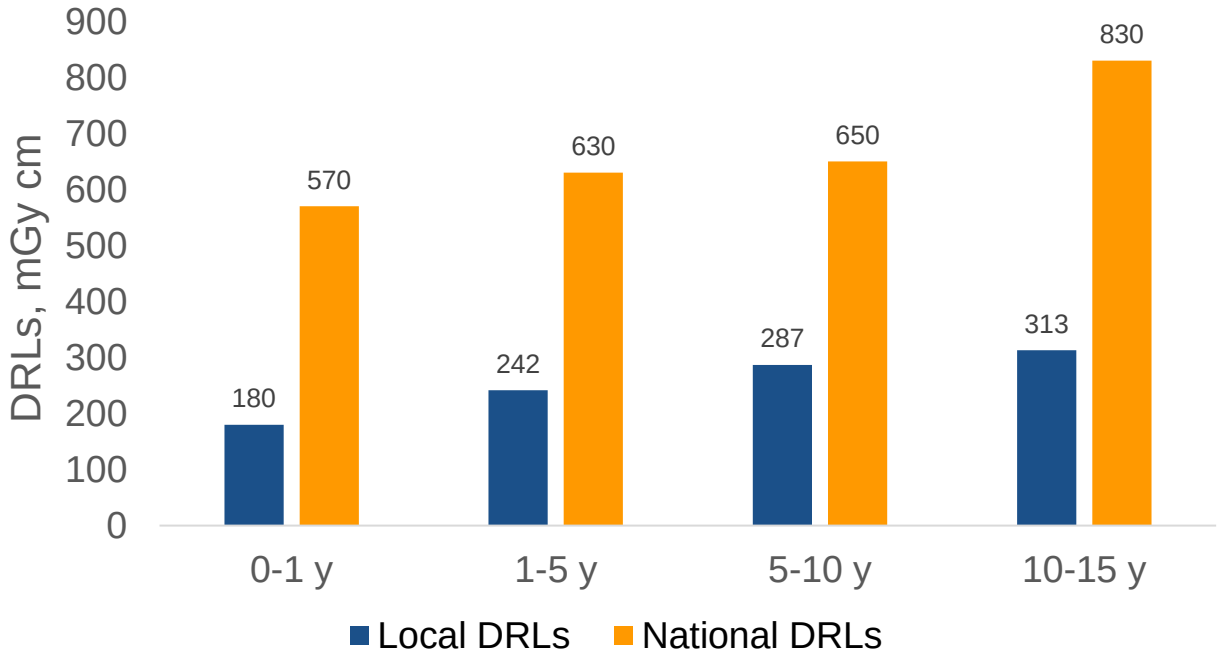
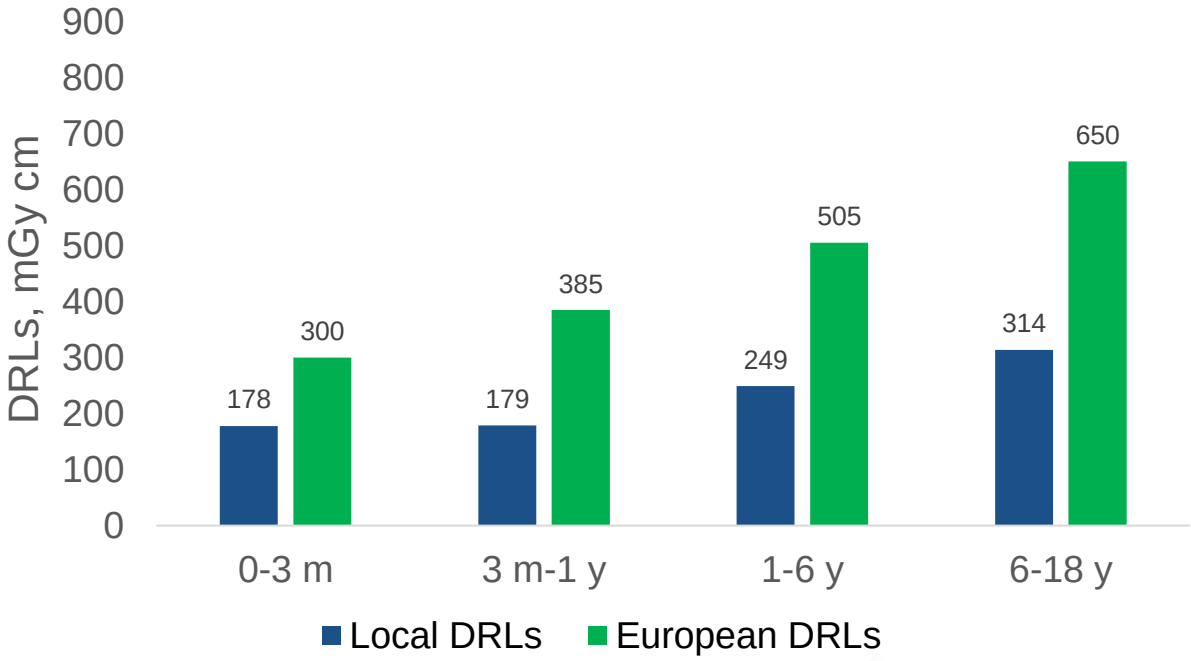


Fig. 2. Comparison of local and European DRLs



Conclusions

- The estimated children's exposure shows that pediatric head CT doses are lower in comparison with those indicated in the majority of published articles from other hospitals over the last 6 years.

- The estimated head CT local DRLs are lower and when compared with national and European DRLs.

- Our initiative via the estimation exposure and determination of local DRLs for paediatric head CT could be a starting point to include other examinations and imaging modalities as well as reassess the current national DRLs.