AbstractID: 13465 Title: Dosimetric quantities for Computed Tomography examinations of paediatric patients on the thoracic and abdominal regions

Purpose: To determine the value of the dosimetric quantities for the Computed Tomography (CT) paediatric examinations of the thoracic and abdominal regions. The protocols studied were those of chest, abdomen, abdomen/pelvis, chest/abdomen/pelvis, pulmonary and mediastine/abdomen, which are the more common examinations performed at the "Hospital Infantil de México Federico Gómez" in these regions. **Method and Materials:** The measurements were performed on a Siemens SOMATOM Sensation 16 CT Scanner and the equipment used were a CT pencil ionization chamber connected to an electrometer, both calibrated for CT beam qualities and a PMMA phantom with diameter of 16 cm and length of 15 cm. **Results:** The dosimetric quantities measured were the weighted air kerma index (Cw), the volumetric kerma index (Cvol) and the CT air kerma–length product. It was found that the pulmonary examination presented the highest values for the dosimetric quantities; 31.1 mGy for Cw and 11.1 mGy for Cvol. The examination with the lowest values was the chest/abdomen protocol with 10.47 mGy for Cw and 5.5 mGy for Cvol. **Conclusion:** There are few publications about the dosimetric quantities for CT on pediatric patients and the reported does not consider the different kinds of examinations of the chest, pelvis and abdomen. This work shows that there is a strong dependence between the protocol used and the imparted dose due to the different values of current and slice thickness. Then, it is important to have a carefully selection of the protocol for the examinations. The values obtained on this work may also serve as diagnostic reference levels for further studies.