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Role of Particle Therapy in Cancer Care. Public Talk **zoom link to access the talk: <https://lmu-munich.zoom.us/j/96417723332?pwd=NHpLR01Rd2N6Q1RobWt2bG5lVGNLUT09>**

Thursday, December 16, 2021 4:30 PM (45 minutes)

Role of Particle Therapy in Cancer Care

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More than 250.000 patients have been treated with particle therapy worldwide. The vast majority of patients, i.e. >240.000 for more than 3 decades treated with protons and about 13-15% (>30.000) using carbon ions. The main physical advantages of particle therapy are the dose distribution using the Bragg-Peak resulting in significant reduction of the low to moderate dose volume delivered to normal tissues –thus resulting in fewer chronic side effects - yet high dose conformality in tumor thus allowing higher tumor residual dosages. Some indications are clearly established, for example, in pediatric tumors, skull base tumors, sarcomas and selective Head&Neck cases and eyes. However, the last decades witnessed an extension into frequent malignancies, in particular in breast cancer, lung cancer and gastrointestinal malignancies. Carbon ion therapy is presently still limited to a few centers only. However, there is significant medical evidence for its application in radio-resistant tumors, unresectable disease and also re-irradiation, based on the combination of physical dose distribution advantages with the higher relative biologic effectiveness. The principles of particle therapy as well as present clinical evidence and future aspects will be provided.

Summary

Presenter: HUG, Eugen (MedAustron Ion Therapy Center)