Influence of PET/CT-introduction on PET scanning frequency and indications. Results of a multicenter study.

AIM: To evaluate the influence of the introduction of combined PET/CT scanners into clinical routine. This investigation addresses the quantitative changes between PET/CT and stand alone PET.

METHODS: The study included all examinations performed on stand alone PET- or PET/CT-scanners within 12 month prior to and after implementation of PET/CT. The final data analysis included five university hospitals and a total number of 15 497 exams. We distinguished exams on stand alone tomographs prior to and after installation of the combined device as well as PET/CT scans particularly with regard to disease entities. Various further parameters were investigated.

RESULTS: The overall number of PET scans (PET and PET/CT) rose by 146% while the number of scans performed on stand alone scanners declined by 22%. Only one site registered an increase in stand alone PET. The number of exams for staging in oncology increased by 196% while that of cardiac scans decreased by 35% and the number of scans in neurology rose by 47%. The use of scans for radiotherapy planning increased to 7% of all PET/CT studies. The increase of procedures for so-called classic PET oncology indications was moderate compared to the more common tumors. An even greater increase was observed in some rare entities.

CONCLUSIONS: The introduction of PET/CT led to
more than a doubling of overall PET procedures with a main focus on oncology. Some of the observed changes in scanning frequency may be caused by a rising availability of new radiotracers and advancements of competing imaging methods. Nevertheless the evident increase in the use of PET/CT for the most common tumour types demonstrates its expanding role in cancer staging. The combination of molecular and morphologic imaging has not only found its place but is still gaining greater importance with new developments in technology and radiochemistry.