Conclusions: The implementation of TID permits to take decisions about the system weakness. In the PC the adopted measures, after the analysis of TID, decrease the APD, and thus improve the outcome with similar acute effects.

References:

EP-1306
Near misses reflect different failure modes than actual incidents in the field of radiation therapy

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Purpose/Objective: Incident management is an important aspect of risk management and quality assurance in the field of radiation therapy. Traditionally, actual incidents (AIs) that impact the patient and near misses (NMs) that are detected prior to reaching the patient have been analyzed and managed in a similar manner. This study aims to determine if AIs and NMs share similar characteristics and can be used interchangeably for risk assessment and continuous quality improvement.

Materials and Methods: Safety reports submitted between January 2010 and June 2012 at a Canadian radiotherapy centre were classified based on guidelines from the World Health Organization as follows: Incident nature (AI, NM), incident type (equipment, documentation, process) and stage of origin (booking/simulation, planning, treatment delivery). Incident type and stage of origin were compared between AIs and NMs.

Results: Among the 552 cases retrieved, 25% were classified as AIs and 75% as NMs. There were significant differences in the distribution of incident type (p<0.001) and stage of origin (p<0.001) between AIs and NMs. AIs were more likely to involve equipment errors (34% vs 8%), whereas NMs were more likely to involve documentation errors (42% vs. 9%). The majority of AIs originated at the treatment delivery stage (51%), while the majority of NMs originated at the booking/simulation stage (53%). Cross tabulation of the data revealed other interesting patterns. Process errors were the most common type of incident in both groups (AI 56%, NM 51%) but the stage of origin differed. For AIs, the majority of process errors occurred at the treatment delivery stage (48%) compared to the booking/simulation stage for NMs (56%). Similarly, while a comparable proportion of AIs and NMs originated at the planning stage, the majority of AIs were process errors (74%) while most of the NMs were documentation errors (54%).

Conclusions: In this study, NMs were found to have different characteristics than AIs. The traditional practice of analyzing and managing NMs and AIs in a similar manner is not the optimal approach to managing risk in radiotherapy, as NMs may reflect different failure modes than AIs. NMs and AIs should be analyzed separately to identify important opportunities for quality improvement.

EP-1307
Pre-trial quality assurance of radiotherapy for the NCRI Aristotle Trial

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Purpose/Objective: ARISTOTLE is a UK NCRI phase III trial comparing standard versus novel chemo-radiotherapy as pre-operative treatment for MRI defined locally advanced rectal cancer. The pre-trial radiotherapy quality assurance (RTQA) process for ARISTOTLE is aimed at ensuring that participating centres comply with the outlining, planning and reporting standards required by the trial protocol. This paper summarises the initial results from the pre-trial RTQA assessments for participating centres.

Materials and Methods: The main requirements of the pre-trial QA process are trial questionnaires, outlining and planning benchmark cases, process document and case submission. Specific aspects include the following. Outlining Exercise. A reference CT dataset is provided for outlining. Participants are required to outline adhering to protocol and utilising naming conventions. It is a requirement that each RT centre returns at least one outlining benchmark case, reviewed and approved by the local Principal Investigator. Planning Cases. Two planning benchmark cases are supplied, with volumes pre-delineated – one prone and one supine. Centres are required to plan the example relating to the position they intend to use for trial patients. Planning is required to be performed as per protocol, with attention paid to the dose volume objectives for both target coverage and maximum patient doses. Planning QA includes submission and evaluation of a Plan Assessment Form using standardised metrics for reporting, which is completed and returned for the planning case.

Results: Forty UK radiotherapy centres have participated in the QA process so far, with full QA completed for 32. Some centres returned planning cases from more than one clinician. The total number of cases returned to date is 40. Reports were submitted to participating centres when QA was completed, with specific dialogue to clarify and address points of uncertainty. Initial review of QA reports received to date suggests some evidence of protocol mis-interpretation with respect to the following.

Outlining. Ipsilateral obturator internus (required to be outlined within CTV by protocol) not included by 11 clinicians of the 40 who have submitted to date. The contralateral obturator internus (not required to be outlined within CTV by protocol) was included by 5 clinicians.