

Establishing the clinical meaningfulness of an algorithm-based service for analyzing treatment response in patients with metastatic cancer

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Key Takeaways:

- important visual and quantitative information that would be useful for patient care is lacking in many FDG PET/CT radiology reports
- oncologists found a new algorithm-based service (TRAQinform IQ) to be useful in filling the unmet clinical need of comprehensive quantification, spatial location and analysis of change for each lesion
- TRAQinform IQ technology provided meaningful data for better understanding of treatment response supporting therapy optimization

Study Aim: Assess the clinical usefulness of a new algorithm-based analysis (TRAQinform IQ) that provides oncologists with comprehensive quantification, spatial location and analysis of change for each detected lesion region of interest (ROI).

Population: 228 patients with a variety of metastatic cancers from 12 imaging sites.

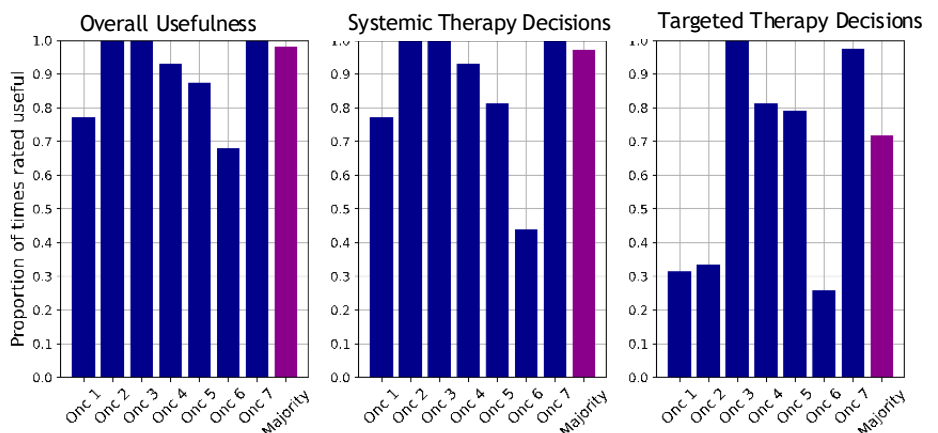
Methods: FDG PET/CT radiology reports for each patient were assessed for the presence of both qualitative and quantitative information. A subset of patients (n=103) was further analyzed using an algorithm-based service (TRAQinform IQ) that provides the clinician with comprehensive quantitative information, including change over time, of all detected ROI with visualization of anatomical location. For each patient, three medical oncologists from different practices independently rated the usefulness of the additional analysis.

“...important visual and quantitative information that is useful for patient care is lacking in many FDG PET/CT radiology reports...”

| Radiology Report Information | # out of 228 | % of reports | 95% CI (%) |
|--|--------------|--------------|---------------|
| Reason for exam | 228 | 100 | [97.9, 100.0] |
| Patient treatment | 81 | 36 | [29.4, 42.2] |
| Number of lesions | 15 | 7 | [3.9, 10.8] |
| Size across two timepoints for subset of lesions | 119 | 52 | [45.5, 58.8] |
| Uptake (SUV) across two timepoints for subset of lesions | 151 | 66 | [59.6, 72.3] |
| Indication of overall patient response | 105 | 46 | [39.5, 52.8] |

“..the solution is to provide information that is distinct from that captured in radiology reports directly to the treating physician in a format optimized for therapeutic decision making.”

Overall, the majority of oncologists (at least two of the three) found the TRAQinform IQ analysis to add clinical value in >80% of cases (p<0.01)



Conclusions: For patients with metastatic cancer, TRAQinform IQ would provide oncologists with novel, useful information not currently available in standard clinical care. This novel data would allow for better understanding of treatment response and support their work to more precisely optimize therapeutic intervention.