AI IN CLINICAL DECISION MAKING

MEDICAL FIELD, OR MEDICAL METHOD
Oncology

TYPE
☑ Decision support ☐ Autonomous decision making

CATEGORY
☐ Prevention ☐ Detection ☐ Diagnosis ☑ Treatment ☐ Other

DESCRIPTION
The study concerned a prospective blinded study of 1000 cases analyzing the role of AI. Watson for Oncology (WFO) was tested against decision making of a Multidisciplinary Tumor Board (MDT).

AIM / PURPOSE
The study aimed at proving that cognitive computing decision support systems holds substantial promise to reduce cognitive burden on oncologists by providing expert, updated, recent evidence-based insights for treatment-related decisions making.

OUTPUT / RESULTS
The MDT reviewed and ultimately chose treatments not previously considered based on information from WFO in 13.6% of cases: of 1000 cases, breast, lung, colon, and rectal cancers were 620, 130, 126 & 124 respectively. There were 712 non-metastatic and 288 metastatic cases. Mean age of the patients was 54.3 ± 12.2. Treatment concordance was observed in 92% for all cancers combined, 93% for rectal cancer, 92% for breast cancer, 89% for lung cancer, and 81% for colon cancer. MDT changed their decision in 136 cases (13.6%). The reasons for tumor board to change their decision was, Watson provided recent evidences for newer treatment in 55%, better personalized alternative in 30% and new insights from genotypic and phenotypic data and evolving clinical experiences in 15% of time.

AI METHODOLOGY
NLP, IBM Watson Machine Learning

INPUT / SIZE OF THE DATA
1000 cases involving breast, lung, colorectal cancer were evaluated by an MDT at a major cancer center in India between 2016 and 2018. After the tumor board decision was made, the MDT was presented with Watson's recommendations contemporaneously. MDT reviewed their decision after going through Watson's recommendations and also the evidences that it put forth supporting its decision. Cases in which decisions was changed, objective assessment was done by asking the MDT to quote the reasons for reviewing and changing their decision.

REFERENCE DOCUMENTS / LINKS / PUBLICATIONS
A prospective blinded study of 1000 cases analyzing the role of artificial intelligence: Watson for Oncology and change in decision making of a multidisciplinary tumor board (MDT) from a tertiary care center. J Clin Oncol. 2019; 37(suppl): abstract 6533. *https://ascopubs.org/doi/abs/10.1200/JCO.2019.37.15_suppl.6533*

SOURCE
IBM Watson Health