6ER-004

USE OF ARTIFICIAL INTELLIGENCE TO IMPROVE MEDICAL CARE IN PATIENTS WITH INFLAMM ATORYBOWEL DISEASE. INFLAMMATORY BOWEL DISEASE. PRELIMINARY MODELS

J. CORDERO[1], L. AMARO-ALVAREZ[1], A. AGUADO-PAREDES[1], C. VÍAS-PARRADO[2], M.Á. ARMENGOL-DELAHOZ[3].
[1]HOSPITAL UNIVERSITARIO VIRGEN MACARENA, HOSPITAL PHARMACY, SEVILLE, SPAIN.
[2]HOSPITAL UNIVERSITARIO VIRGEN MACARENA, GASTROENTEROLOGY, SEVILLE, SPAIN.
[3]FUNDACION PROGRESO Y SALUD, AREA DE BIG DATA, SEVILLA, SPAIN

Jaime.cordero.sspa@juntadeandalucia.es

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Background and importance

Inflammatory bowel disease(IBD) are chronic disorders that severely impact patients' quality of life. Current treatments, which are often immunosuppressive and biologics, have significant side effects and are not always effective. The variability in response to these treatments makes it essential to personalize therapeutic management to reduce costs, minimize risks and improve outcomes.

Aim and objectives

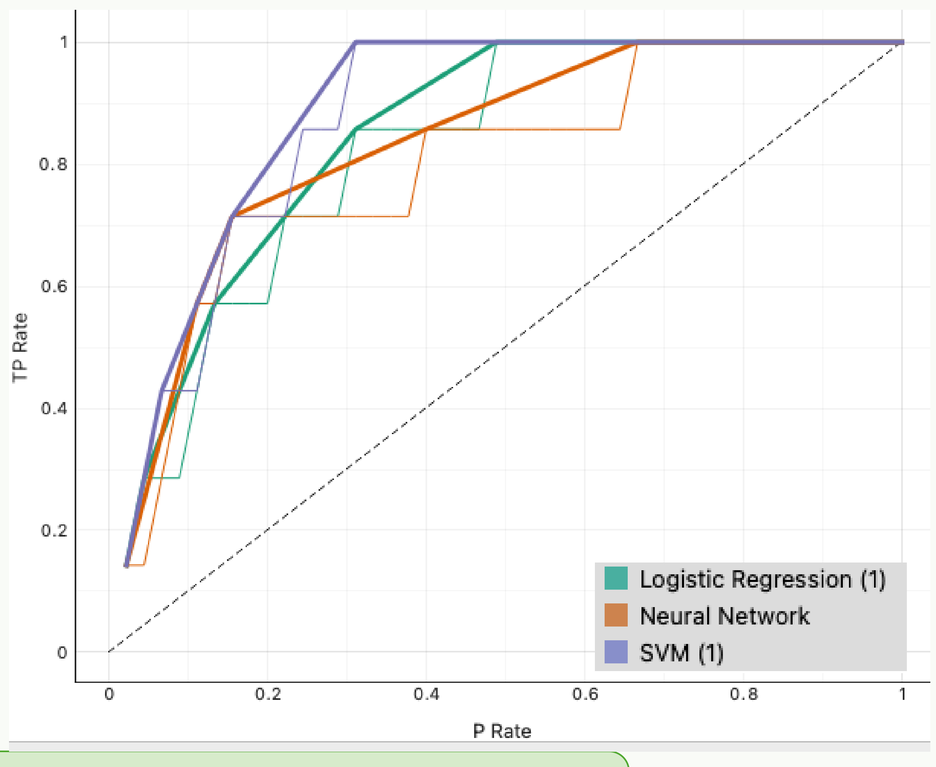
The aim of the project is to develop a model to predict if patients will respond to treatments, helping to make more informed clinical decisions and improving medium-term outcomes.

Material and methods

To explore the development of a 26-week response prediction model, clinical, analytical, and treatment data from the three months prior to the initiation of infliximab/adalimumab/vedolizumab/ustekinumab were used in patients over-18 years of age with a confirmed diagnosis of IBD. Patients without availability/access to electronic health record data, with 50% of study variables not recorded or with a loss to follow-up prior to week-26 were excluded. The proportion of patients intended for training and internal validation of the model was 90% and 10%, respectively. The selected center was a tertiary level hospital and the period analyzed was from January 2012 to January 2024.

Results

A total of 1068 patients with a mean(±SD) age of 42.82(±21.08) years at the start of treatment and a mean (±SD) time of IBD evolution of 8.8(10.7) years. The proportion of male was 51.8%. Patientswith CD accounted for 72.9%, and 24.25% had perianal disease. The drug response rate at week 26 was 82%.A neural network model was sketched. The proportion of missing values among the selected variables was 17%.



Model	AUC	CA	F1	Precision	Recall
SVM	0.793	0.816	0.782	0.800	0.816
Random Forest (1)	0.787	0.810	0.771	0.790	0.810
Neural Network	0.763	0.811	0.802	0.798	0.811
Logistic Regression	0.724	0.785	0.781	0.777	0.785

Conclusion and relevance

The history, clinical and laboratory variables generated during the months prior to starting treatment could be used effectively to identify non-responders and optimize their therapy.