

NETIMIS

CASE STUDY

GCA Care Pathway

Client: The TARGET Consortium

Overview

This case study builds on the work of the MRC TARGET Consortium and X-Lab Ltd (Salimi, 2017) by providing a data driven approach to advancing the Giant Cell Arteritis (GCA) pathway in place at Leeds Teaching Hospital Trust as potential service improvements are explored.

This case study is the outcome of a University of Leeds undergraduate project in collaboration with the MRC TARGET consortium pairing clinical insight with a data driven approach to simulate current and improved patient care pathways, using a tool called NETIMIS, provided by X-Lab Ltd.

About GCA

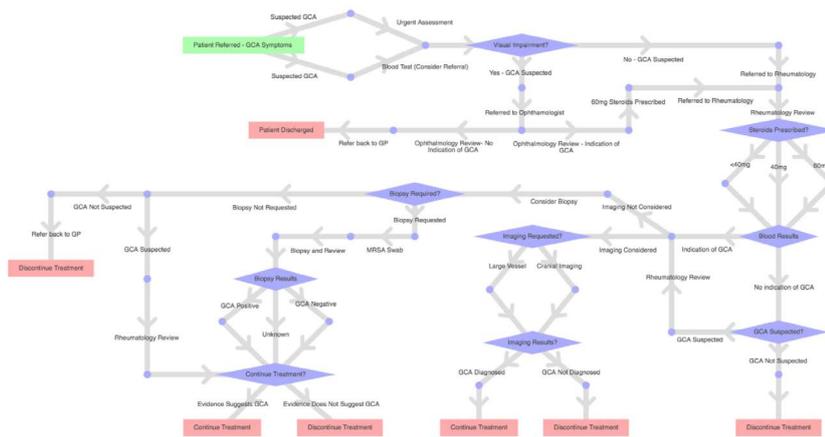
Giant Cell Arteritis (GCA) is a vasculitis disease which affects predominately patients aged 50 and over, with a higher proportion of female patients being affected than male patients. GCA causes inflammatory damage to patients' arteries and surrounding tissue leading to adverse health effects such as permanent vision loss, stroke and if left untreated, death. Symptoms of GCA include jaw claudication, headaches and tenderness around the temporal arteries.

Challenges

To minimise these adverse health effects of Giant Cell Arteritis, steroid treatment is administered at the earliest suspected presence of the disease. However, a challenge for trusts treating patients with suspected GCA is that the treatment itself can lead to adverse health effects related to steroid toxicity. Therefore, it is aspirational to reduce the time patients are on steroids who subsequently receive a negative GCA diagnosis, while balancing this against the criticality of preserving patients' vision and quality of life. Such service improvements to the pathway in place can be explored and discovered with the help of NETIMIS.

How NETIMIS helped

NETIMIS provides an impactful way of representing the Giant Cell Arteritis care pathway in place at the Leeds Teaching Hospital Trust. Due to the simulation capabilities of NETIMIS, it is possible to present a visual representation of what is a naturally a complex task to map the inter-departmental pathway across the trust. NETIMIS provides a platform allowing a discrete representation of the processes a patient with suspected GCA will encounter from initial referral to diagnosis to be put forward. NETIMIS is also useful in its ability to engage a varied stakeholder group with clear simulations which can be discussed and reviewed. Further to the visual representation, NETIMIS supports the integration of population level patient data in the form of probabilistic pathway outcomes and process costs incurred. NETIMIS as a platform is therefore able to help derive potential pathway improvements from running and analysing the simulation.



Conclusion

The data driven approach taken to the advancement of the GCA diagnostic pathway in place at Leeds Teaching Hospital Trust has paved the way for an advanced simulation which provides stakeholders with rich insight into the overall pathway. In this case study, modelling decisions have been driven by the analysis of real patient data, meaning the analysis extracted from running and reviewing the simulation serve to much better inform future clinical decisions along with providing a clear case for service improvements to the pathway.

The utilisation of NETIMIS in this process is a key enabler to model data acquired from multiple sources in a clearly presentable simulation which can engage a varied stakeholder group.