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The Safe Introduction of Tocilizumab for the Treatment of SARS-CoV-2 Pneumonia at an East London District General Hospital

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Abstract : Since the advent of the SARS-CoV-2 pandemic, the search for medications that can reduce mortality and morbidity has been a global research priority. Several multi-center trials have recently demonstrated improved mortality associated with the use of Tocilizumab, an interleukin-6 receptor antagonist, in patients with severe SARS-CoV-2 pneumonia. Initial data supported the administration in patients requiring respiratory support (non-invasive or invasive ventilation), but more recent data has shown benefit in all hypoxic patients. At the height of the second wave of COVID-19 infections in London, our hospital introduced the use of Tocilizumab for patients with severe COVID-19. Tocilizumab is licensed for use in chronic inflammatory conditions and has been associated with an increased risk of severe bacterial and fungal infections, as well as reactivation of chronic viral infections (e.g., hepatitis B). It is a specialist drug that suppresses the formation of C-reactive protein (CRP) for 6 – 12 weeks. It is not widely used by the general medical community. We aimed to assess Tocilizumab use in our hospital and to implement changes to the protocol as required to ensure administration was safe and appropriate. A retrospective study design was used to assess prescriptions over an initial 3-week period in both intensive care and on the medical wards. This amounted to a total of 13 patients. The initial data collection identified four key areas of concern: adherence to national and local inclusion & exclusion criteria; a collection of appropriate screening blood prior to administration; documentation of informed consent or best interest decision and documentation of Tocilizumab administration on patient discharge information, to alert future healthcare providers that typical measures of inflammation and infection, such as CRP, are unreliable for up to 3-months. Data were collected from electronic notes, blood results and observation charts, and cross referenced with pharmacy data. Initial results showed that all four key areas were completed in approximately 50% of cases. Of particular concern was adherence to exclusion criteria, such as current evidence of bacterial infection, and ensuring the correct screening blood was sent to exclude infections such as hepatitis. To remedy this and improve patient safety, the initial data was presented to relevant healthcare professionals. Subsequently, three interventions were introduced and education on each provided to hospital staff. An electronic ‘order set’ collating the appropriate screening blood was created simplifying the screening process. Pre-formed electronic documentation which can be inserted into the notes was created to provide a framework for consent discussions and reduce the time needed for junior doctors to complete this task. Additionally, a ‘Tocilizumab’ administration card was created and administered via pharmacy. This was distributed to each patient on discharge to ensure future healthcare professionals were aware of the potential effects of Tocilizumab administration, including suppression of CRP. Following these changes, repeat data collection over two months illustrated that each of the 4 safety aspects was met with a 100% success rate in every patient. Although this demonstrates good progress and effective interventions the challenge will be to maintain this progress. The audit data collection is ongoing

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