Safety and Efficacy of Reperfusion Therapy for the Treatment of Ischemic Strokes in Patients with Covid-19 Hyunjoong Jung^{1,3}, Anvitha Sathya², Mohamad Abdalkader³ BOSTON Cupertino High School, 10100 Finch Avenue, Cupertino, CA 95014¹; Boston School of Medicine, 700 Albany JNIVERSI

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Introduction

Ischemic Stroke is the most common of all strokes (around 87%). It occurs when a blood clot forms in an artery in the brain, and prevents the blood flow, like so.

Objective

How does the infection of COVID-19 affect the safety and efficacy of reperfusion therapy for ischemic strokes, and is there an increased risk of mortality rates and symptomatic or intracranial hemorrhage under such circumstances?

Results Rankin Score in stroke patients with and without COVID-19 ASTRAL



It can cause malfunctioning of one side of the body, seizures, dizziness, blurry vision, poor speech, etc.

Methods

A literature review was conducted, with articles being collected from a variety of sources, including PubMed, Embase, and Web of Science.

The articles used were strictly restricted between January 2020 to July 2022.

thrombolysis, Only intravenous mechanical endovascular therapy, thrombectomy, and bridging were



Ntaios et. al, 2020

Discussion

There was a significant increase of mortality rates among patients with COVID-19 compared to those without it.

Additionally, the severity of the stroke is higher and the functional outcomes are negatively impacted for positive patients.

Further research and studies are

Fortunately, there are treatments to the stroke. Thrombolysis is the injection of medicine into the blood vessels through an intravenous line to dissolve the blood clots.





Results

In a study involving 41971 patients, it was observed that when treated with endovascular therapy and thrombolytics at a similar rate, patients with COVID-19 had longer needle, computed door to tomography, and endovascular times compared to those not infected. As a result, it was concluded that stroke care was more timely and had worse outcomes. (Srivastava et. al, 2021)

Another multi-study noted that while reperfusion therapies seemed safe for all patients, those infected with COVID-19 suffer high in-hospital and mortality rates, even though the therapies successful. were (Jurkevičienė et. al, 2022)

necessary to investigate why such are true, and how reperfusion therapies can be improved and adjusted to provide safer and more efficient care for AIS patients with COVID-19.

References

Srivastava, Pratyaksh K et al. "Acute Ischemic Stroke in Patients With COVID-19: An Analysis From Get With The Guidelines-Stroke." *Stroke* vol. 52,5 (2021): 1826-1829. doi:10.1161/STROKEAHA.121.034301

Jurkevičienė, Justina et al. "Reperfusion Therapies for Acute Ischemic Stroke in COVID-19 Patients: A Nationwide Multi-Center Study." *Journal of clinical medicine* vol. 11,11 3004. 26 May. 2022, doi:10.3390/jcm11113004

Martí-Fàbregas, Joan et al. "Impact of COVID-19 Infection on the Outcome of Patients With Ischemic Stroke." *Stroke* vol. 52,12 (2021): 3908-3917. doi:10.1161/STROKEAHA.121.034883

Ntaios, George et al. "Characteristics and Outcomes in Patients With COVID-19 and Acute Ischemic Stroke: The Global COVID-19 Stroke Registry." *Stroke* vol. 51,9 (2020): e254-e258. doi:10.1161/STROKEAHA.120.031208

Ischemic Stroke. (n.d.). [Illustration]. Ischemic Stroke (Clots). https://www.stroke.org/-/media/Stroke-Images/About-Stroke/Types-of-Stroke/Illustr ationofaStroke_04.jpg?h=375&iar=0&mw=600&w=600&hash=4BD693A253C327B735 54998A2A3C3822

Samanthi. (2021, November 25). *Thrombolysis* [Illustration]. What Is the Difference Thrombolysis Fibrinolysis. and Between https://i2.wp.com/www.differencebetween.com/wp-content/uploads/2021/11/Angi ojet.png?w=362&ssl=1 Lou, N. (2021, April 5). *Thrombectomy* [Illustration]. Cath Lab Team Easily Trained to Stroke Intervention. https://assets.medpagetoday.net/media/images/91xxx/91934.jpg

Thrombectomy is the insertion of a physical instrument through а catheter into the blood vessels to disperse the blood clots.



Another article determined that the proportion of favourable functional outcomes was lower in COVID-19 positive patients than negative (33.7%) to 47.0%), and mortality rates were 16.1%). (39.3% to likewise (Martí-Fàbregas et. al, 2021)

Acknowledgements

I would like to thank Dr. Abdalkader and Ms. Sathya for giving me an opportunity to contribute to this project.

I would also like to thank the RISE program for allowing me to have such opportunity.