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Original Article

Recognising pearls and pitfalls in the emergency medicine department during initiation of a new stroke thrombolysis service

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Abstract

Strokes are a common presentation to emergency departments all over the world. Early recognition of strokes is essential which is followed by ruling out stroke mimics, going for a radiologic investigation and decision making for thrombolysis. To create a fully functioning Neuro emergency stroke team in assisting in stroke thrombolysis, a dry run was done for a month in the emergency department which saw the common challenges and pitfalls to tackle before the actual thrombolysis is started to prevent or minimize the risk of complications of stroke management.

Keywords:- Challenges, Pitfalls, Emergency Medicine, Stroke, Thrombolysis

Introduction

Stroke is one of the main causes of mortality and morbidity worldwide (Kim, 2015). Even in Malaysia, a stroke makes some of the most common presentations to the emergency departments. Community awareness about stroke in the geographic belt or evidence of stroke cases worldwide shows that stroke is a main cause of neurologic emergencies all around the globe. Mortality and morbidity have also been affected due to the increase in waiting times for admission for patients with concomitant covid -19 which is a worldwide pandemic affecting emergency departments current (Azhan, 2021).

In emergency departments, stroke awareness is spread via medical education in the form of Continuous medical education (CME) (Singh, 2021). Stroke teachings in local settings, incorporation into critical care rounds and learnings, national conferences in stroke care, subspecialty training online and onsite fellowships in stroke management, and international stroke councils have made significant knowledge improvements in stroke management.

Emergency departments also have logistic capabilities to handle stroke patients in recent times. Monitoring of critically ill patients is done in the emergency departments in many ways including use of critical care charts and critical care monitoring devices (Singh, Hassuna & Mamat, 2021). Even in resource-limited settings, the emergency departments can set up to cater to critically ill patients requiring management and monitoring of the critically ill (Singh, 2022).

Methodology

The Stroke Box is where the stroke bag is kept. Inside the stroke bag is the alteplase and medications such as labetalol, the stamp for the activation code in a stroke case, and the charts for reference. This creates an awareness of the importance of this bag and ensures medication safety as well. The stroke table is a reserved area in the stroke corner dedicated to removing and keeping the bag in an activation. Reference of charts, filling up of forms, dilution of medication. It creates a separate corner so that the record, dilution of drugs and procedures don't get mixed with other forms and procedures and thus ensures safety goals in stroke treatment. The stroke drawer section highlights all the forms including the CT scan forms, the CT contrast forms, the thrombolysis consent forms, the stroke clerking forms all pre-set and pre labelled with the stroke stamp to smoothen out activation make it quicker and ensure that we meet the door to thrombolysis times of stroke. On the stroke corner wall, we have pasted a giant

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stroke chart so that all departments including medical, neurology, emergency, radiology and geriatrics may refer to the standardized SOP so that there will not be any discrepancy or miscommunication during a stroke call.

Result

The first pearl was creating awareness among all staff in the emergency department on the development of this new service. Many methods were instilled including a continuous medical education CME session to introduce this new method. However, the pitfall that arose was that the emergency department works in shifts, and not everyone will be present at the particular time using the CME thus this creates a gap in empowering knowledge to all staff at a high rate (Zweifler, R.M., 2003)

The second pearl was creating a pre-hospital care assessment tool to quickly identify a stroke with high sensitivity and specificity. The Cincinnati pre-hospital stroke scale BEFAST had high sensitivity and specificity, could be completed early and quickly, was easy to use, and could maintain compliance from the paramedics and was used officially as the pre-hospital stroke scale for the stroke thrombolysis program. However, the pitfalls were compliance. Not being used to cite a pre-hospital stroke scale, not being familiar with the stroke scale, and using a common and conversational approach towards stroke was the challenge. Changing old practices of pre-hospital care with the incorporation of scales and objective assessment is important to improve community stroke recognition

The third pearl was creating a stroke corner in the emergency department dedicated to stroke items. Creating a stroke corner has many benefits including creating stroke governance, asset management which includes the stroke bag, medication regulation which includes the safety of the alteplase in the bag, a stroke awareness corner to increase the sensitivity of the officers to activate a stroke call when they see a patient with stroke, a section for easy feasibility to fill out the stroke forms and radiological investigation request forms, and a place to keep the records of all stroke cases so that it can be used in the audit. The pitfall here is that no party took responsibility for the area. Clutter was an issue with other assets overlying the space created. The stoke bag that contained the medication was moved to another area to create space for other assets. Forms were not being topped up and this created a logistic and asset interruption.

The fourth pearl was creating a stroke bag. The purpose of the stroke bag is to place all the material needed for stroke thrombolysis in the bag so that when a patient with a stroke arrives in the ED, all that the person in charge needs to do is go to the stroke corner, look for the bag and all the charts, medications such as alteplase for thrombolysis, labetalol for BP, dxt for sugar monitoring and mimics and Laos hydrocortisone would already be in the bag. This would make stroke thrombolysis more efficient. However, the pitfall is managing the bag itself. Personnel need to govern and monitor the bag daily, it needs to be kept in a secured place so that medication safety is ensured, and documents such as stroke forms need to be topped up daily and this would require commitment and deviation from the team involved.

The final pearl would be a holistic integration of all departments including emergency medicine, radiology, neurology, acute medicine, medical, anesthesiology, intensive care, transfusion medicine, and more. To be able to come together, with each ema playing their roles efficiently with a common understanding and pathway I'll make sure the flow is smooth and time effective. The pitfalls would be to come together in a time of surge capacity to ensure the protocol is followed by all departments and the constant constraints of time, overcrowding, and access blocks.

Discussion

Starting a new service in the emergency department can be a challenge. With the overcrowding in emergencies, starting a new service needs proper planning and execution. A stroke thrombolysis service is essential as an emergency treatment that is time-based that and can improve the quality of life of stroke patients weighing the benefits and ratio. Creating a new stroke thrombolysis service has its pearls in which governance initiatives can improve the implementation of the protocol. However, each pearl comes with a pitfall that needs to be recognized and shared to manage the governance better. In this article, we discussed the pearls and pitfalls of initiating a stroke thrombolysis service in the emergency department.

Conclusion

humble initiative, in a humble budget with humble intention to create branding, governance and improving the survival and functionality of our stroke patients. We hope this small initiative will be able to promote better wellness in the survival of our stroke patients in our region.

Conflicts of Interest

The authors declare that they have no conflict of interests.

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