

Some Stroke Treatments Proven to Reduce Health Care Costs

SAN FRANCISCO, CALIF. – July 27, 2015 – Use of mechanical thrombectomy on qualifying stroke patients could result in major savings to the healthcare economy in the United Kingdom (U.K.) and other western countries with a similar healthcare structure, according to a new study presented at the Society of NeuroInterventional Surgery 12th Annual Meeting in San Francisco.

The study, *Developing an Interventional Stroke Service: Improving Clinical Outcomes and Reducing Cost and Delivering Great Cost Savings Benefits to Health Economy*, conducted at the University Hospital of North Midlands, Stoke-on-Trent, U.K., found that mechanical thrombectomy (the use of a device to retrieve a clot from the vessel) in the treatment of stroke reduced the average stroke patient's hospital stay to 14 days when compared to previously recorded 90 days. In addition, more than nine in 10 patients were discharged to their home as opposed to a nursing home. Using this data, the study also found the use of mechanical thrombectomy produced a net savings of £3.2 million (approximately \$5 million), or £684,000 per 100,000 populations served (approximately \$1.1 million). The study estimates that there are around 20,000 to 25,000 potential patients that could receive mechanical thrombectomy within the U.K. if used as a mainstream treatment for large vessel clots.

"It's quite amazing that this treatment can make such a notable impact, both medically and economically," said Dr. Sanjeev Nayak, the lead author of the study and a neurointerventionalist at the University Hospital of North Midlands. "Not only are we seeing patient mortality and time in the hospital reduced dramatically when treating large vessel clots with mechanical thrombectomy, but we are saving money in the process. This procedure shows strong benefit, both for eligible patients and our healthcare system as a whole."

While the clot-busting drug known as tPA (tissue plasminogen activator) had been the only medical therapy approved for treatment of acute stroke in the United States (U.S.), the projected U.K. cost savings of mechanical thrombectomy treatment as reported in the study could correlate to the U.S., making the treatment an even better option. In America, stroke is the leading cause of disability and the fourth cause of death. In 2010, stroke cost the U.S. an estimated \$54 billion, including the cost of health care services, medications and missed days of work. Additionally, strokes account for \$74 billion in health care expenditures annually for treatment due to disability.

About The Society of NeuroInterventional Surgery

The Society of NeuroInterventional Surgery (SNIS) is a scientific and educational association dedicated to advancing the specialty of neurointerventional surgery through research, standard-setting and education and advocacy in order to provide the highest quality of patient care in diagnosing and treating diseases of the brain, spine, head and neck. www.snisonline.org. Follow us on Twitter @SNISinfo.

About the University Hospitals of North Midlands

University Hospital has two sites: the Royal Stoke University Hospital, located in Stoke-on-Trent, and the County Hospital, located in Stafford. The current County Hospital was built in 1983, providing a full range of general acute hospital services for approximately 700,000 people living in and around Staffordshire and beyond. Both hospitals provide specialized services, such as Trauma, for three million people in a wider area, including neighboring counties and North Wales.

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ABSTRACT

Developing an Interventional Stroke Service: Improving Clinical Outcomes and Reducing Cost and Delivering Great Cost Saving Benefits to Health Economy

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Purpose:

To improve patient clinical outcomes and provide cost saving benefits to our local organization, community care and the National Health Service (NHS) within in the United Kingdom, by treating patients presenting with large vessel occlusive stroke by Mechanical Thrombectomy.

Materials and Methods:

All patients treated with mechanical Thrombectomy (MT) for acute stroke at UHNM, Stoke-on-Trent, UK, were entered into a prospective register. Baseline demographic, imaging and clinical data, outcome scores, duration of patient stay, discharge destinations and other relevant data for cost analysis were recorded. Mortality, and modified Rankin score (mRS) were assessed at 90 days. We performed a detailed analysis of Clinical outcomes as measured by 90 days mRS score and correlated it to the resultant costs savings to our NHS Hospital from the reduced bed days for the inpatient stay and the financial savings to the social care in terms of reduced costs due to patient clinical improvement and reduced disability. We used shift analysis (shift to lower mRS score) to deduce the savings of patient costs to the hospital and social care due to improvement in the clinical outcome with resultant cost saving for every grade of downward mRS Score shift. We also extrapolated our local institutional cost savings to the UK national data.

Results:

From January 2010 to December 2014 we identified 198 patients treated with mechanical Thrombectomy. Our institution has the largest patient series in UK for patients undergoing mechanical Thrombectomy for severe strokes. 47% of patients were alive & independent (mRS<2) and the mortality rate was 17%. This significantly reduced the length of stay with median in-hospital stay being 14 days when compared to 90 days previously. 91% of live discharges are now discharged home when compared to a nursing home previously. From our patient series this produced a net savings to health and social care costs of £3.2m or £684,000 per 100,000 populations served. These are summarised as follows; savings of £2.4million from a reduction in the length of stay in hospital, a reduction of £1.6million in social care costs. Based on the current local tariff an income of £1.0 - £1.2million was generated from Mechanical Thrombectomy procedures for our hospital. Extrapolating the data we estimate that around 20000 to 25000 potential patients could benefit from mechanical Thrombectomy within the UK if used as a mainstream treatment for large vessel strokes.

Conclusion:

Mechanical Thrombectomy has shown benefit in improving clinical outcomes with significant cost saving benefit to our institution and the community care. If the cost saving benefits is extrapolated to the stroke population of the United Kingdom or any other western country with a similar healthcare structure, this will lead to major savings to the healthcare economy. For this to materialise, there needs to a larger government initiative to streamline stroke pathways and provide adequate funding to develop this service uniformly across the country.

Disclosures:

S. Nayak: None.