

Development of a model to optimize strategies of patient management in stroke

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1 Introduction

Third leading cause of global mortality, stroke is also a major cause of disability.

Thrombolytic therapies are currently being developed for ischemic stroke (IS), which represents 80% of stroke, and are expected to reduce mortality and dramatically reduce disability. However such treatment required to be administered at very early stages (windows 0-3hrs, 3-4.5hrs or 3-9hrs) and after some specific neuro-imaging testing and procedures.

Little reliable information is available on time required in real life to perform such neuro-imaging testing after arrival to hospital and the impact of the hospital organization on this time.

2 Material and methods

As part of a national observational cohort study of patients admitted for IS, data will be collected to feed a decision-making support model to identify optimal policy for management of IS.

A secondary objective is to evaluate the impact of health care organization on the ability for a given hospital to administer to the highest possible number of IS patients a thrombolysis therapy. Finally, data will also be used to estimate budgetary impact of various treatment options as well as effectiveness defined as long-term disability.

3 case report forms (CRF) were developed in collaboration with stroke unit leaders, statisticians, pharmacologists and epidemiologist to all relevant data to achieve our goal and were validated by a board of Stroke Unit clinician experts.

Then, three programs were developed to capture the information associated to the three CRF:

- Embedded software on a tablet pc to collect live data at first admission at hospital. It captures time to and duration of actions (intervention and investigation) performed in acute phase as well as staff involved for each action.
- An electronic data capture software off line to collect patient outcome and associated resource utilization in acute phase i.e. during first acute hospitalization.
- An online data capture for collecting follow up information on resource utilization and patients outcome at 3, 6, 9 and 12 months after discharge

All data collected is synchronized with a remote central database.

3 Results

A feasibility study is now completed to test the entire process of data capture. All softwares are in place.

A pilot study is being proceeding at Bordeaux stroke unit, Hospital Pellegrin.

15 patients have already been recruited for that study and support the reliability and feasibility of such processing.

More results will be available at the time of the conference and will be presented.

4 Conclusion

This model will provide robust information for microcosting of acute hospitalization stay after admission for ischemic stroke. It will allow identifying the impact of health care organization within hospital on patient management and requirement for optimization. More specifically it will provide support for policy decision makers to increase thrombolysis rate.

Long-term assessment will help understanding the actual impact of short-term benefit on patient long-term outcome and resources used.

More generally, the development of the Tablet PC software, allows recording for an individual all interventions and investigations as well as professional care givers involvement (time and profile). This could provide a useful and reliable tool for DRG cost calculation that is filled in online and not post hoc at the end of the day when professional caregivers finished their daily work, as it is often the case.