ORIGINAL ARTICLE /*Remote consultation*

Convincing quality of acute stroke care in TeleStroke Units

Qualité des soins dans la prise en charge des AVC à la phase aiguë dans des unités de « Télé-AVC »

P. Müller-Barna [a,*], S. Boy [b], G.J. Hubert [c], R.L. Haberl [c]

[a] Department of Neurology, Krankenhaus Agatharied, Norbert-Kerkel-Platz, 83734 Hausham, Germany
[b] Department of Neurology, University Hospital Regensburg, Regensburg, Germany
[c] Department of Neurology, Klinikum Harlaching, Städtisches Klinikum München GmbH, Munich, Germany

Summary

Background and purpose. — Implementation of TeleStroke Units is one way to organize acute stroke care in underserved, mostly rural, areas. The Telemedical Project for Integrative Stroke Care (TEMPiS) is a TeleStroke Unit network in Bavaria, Germany. We aimed to determine quality of acute stroke care in TEMPiS TeleStroke Units.

Methods. — All TEMPiS TeleStroke Units report quality data to the Bavarian Stroke Registry. Predefined national quality indicators are analyzed. Results for the year 2013 are reported. Results of quality indicators of TEMPiS TeleStroke Units were looked at regarding fulfillment of predefined national targets and compared to statewide and national results.

Results. — In 2013, 15 TEMPiS TeleStroke Units treated 7386 patients with stroke and TIA (hospital range 240 to 892; mean 492; median 452). Documentation rate was 99.3%. In 12 of 13 indicators predefined targets were fulfilled. In comparison to all 154 hospitals participating in the Bavarian Stroke Registry, TeleStroke Units had better percentage levels in 14, worse levels in three and equal levels in one quality indicator.

Conclusion. — Registry data of the TeleStroke network TEMPiS suggest a convincing acute care quality in TeleStroke Units.

* Corresponding author.
  E-mail address: peter.mueller-barna@khagatharied.de (P. Müller-Barna).

MOTS CLÉS
Télé-AVC ;
Unité
neurovasculaire ;
Soins aux AVC ;
Indicateur qualité

Résumé

Contexte. — La mise en œuvre d'unités de type télé-AVC est une façon d'organiser les soins aux accidents vasculaires cérébraux (AVC) aigus dans les zones mal desservies, principalement rurales. Le *Telemedical Project for Integrative Stroke Care* (TEMPiS), ou projet télémédical pour soins aux AVC intégrés, est un réseau d'unités télé-AVC en Bavière, Allemagne. Nous avons eu pour but de déterminer la qualité des soins aux AVC aigus dans les unités télé-AVC du réseau TEMPiS.

Méthodes. — Le réseau TEMPiS rapporte les données de qualité enregistrées dans toutes leurs unités télé-AVC et associées au registre bavarois des AVC. En prenant des indicateurs de qualité nationaux prédéfinis, les résultats pour l'année 2013 des unités Télé-AVC TEMPiS sont présentés et analysés en fonction des cibles prédéfinies nationales et en comparaison avec les résultats de toute la Bavière et du pays entier.

Résultats. — En 2013, 15 unités télé-AVC TEMPiS ont traités 7386 patients avec un AVC constitué ou un AIT (moyenne 492, médiane 452, SD 240 à 892). Le taux de renseignements tous indicateurs confondus était de 99,3 %. Parmi 12 des 13 indicateurs, les cibles prédéfinies ont été accomplies. En comparaison avec tous les 154 hôpitaux participant au registre bavarois des AVC, les unités télé-AVC avaient des meilleurs taux de pourcentage pour 14 indicateurs de qualité, des taux plus mauvais pour 3 et des taux égaux pour un indicateur.

Conclusion. — Les données enregistrées dans le réseau télé-AVC TEMPiS suggèrent que la qualité des soins prodigués aux patients avec AVC est aussi convaincante que celle produites dans les unités neurovasculaires.

© 2015 Elsevier Masson SAS. Tous droits réservés.

Introduction

Quality assessment in acute in-hospital stroke care is well established in many countries, e.g. France, Germany, Sweden, Great Britain, Finland, Spain, USA, and Canada [1—8]. Assessment in regional or national registries reflects quality of distinct stroke system of care and enables benchmarking of hospitals and regions. Different quality indicators emphasize different steps in the supply chain. One example is early brain imaging which is a parameter testing the admission process, while rate of swallowing aims to measure Stroke Unit treatment, and rate of anticoagulation in patients with atrial fibrillation is one issue in secondary prevention.

In rural areas, organization of an effective stroke system of care is challenging. Centralized systems suffer from pre-hospital time delays due to large transportation distances, while decentralized systems struggle with the 24/7 availability of on-site neurovascular expertise. The Telemedical Project for Integrative Stroke Care (TEMPiS) in Bavaria, Germany was established in the early hours of the TeleStroke era [9]. The principle aim of the network was to establish Tele-Stroke Units in each hospital with multidisciplinary stroke teams and standardized stroke care protocols. TEMPiS Tele-Stroke Units (TSU) are supported by the stroke centers in terms of continuous medical education and quality assessment. An evaluation of the 10 years period from 2003 to 2012 demonstrated a continuous improvement of all quality indicators on a high quality level [10].

To date, only limited data about quality assessment in telemedical stroke networks are available. The aim of this study was to find out whether quality of stroke care in the TeleStroke network TEMPiS fulfils national targets.

Methods

In the year 2000, the Bavarian stroke registry (BSR) was established [11]. In 2006 in a national effort it was adapted to a German-wide registry with evidence-based quality indicators defined by the German Stroke Registers Study Group (ADSR) [12]. In 2013, a total of 154 hospitals with stroke patients in Bavaria participated and delivered data to the BSR [13]. The BSR comprises all cases with the main diagnoses transient ischemic attack (ICD-10-code G45), intracerebral haemorrhage (I61), ischemic stroke (I63) and undefined stroke (I64). Each dataset includes information about the in-hospital stay, demographics, premorbid living situation, medical history, symptoms and functional status at admission, diagnostics, therapy, complications, functional status at discharge and discharge aim. Data were entered in an electronic record, which contains plausibility checks.

Eighteen quality indicators addressing structure, processes and outcomes are predefined by the ADSR. Their names and definitions are given in Table 1. Quality targets for 12 indicators were defined on a national level by the ADSR in 2010. The target of one further quality indicator (door-to-needle-time < 60 min) was defined in the state of Bavaria by a commission of senior stroke experts (Fachkommission) within the Bavarian Working Group for Quality Assurance in Hospitals. For five indicators there is no target defined neither on state nor on national level (Table 2). Since the start