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Abstract

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Stroke and TIA are the most common non-fatal vascular event. The diagnosis can be difficult with many differential diagnosis in the acute phase. Thrombolysis is the only evidence based acute treatment with a net benefit for good outcome in one of 3-10 treated patients up to 4½ h from symptom onset. The earlier the treatment starts the higher chance for good outcome leaving the patient with no symptoms or only small neurological deficits without handicap. Thrombolysis has to be well organized in order to be effective for most patients and is increasingly used nationwide, but many patients are still not treated. The reason for this is several 1) lack of awareness in society on stroke symptoms, 2) the acute handicap leaving the patient unable to call for help 3) stroke during sleep and 4) thrombolysis not yet licensed for patients aged over 80 years.

In Region Midt in Denmark we have a unique organization for acute stroke treatment, and 23% of ischemic stroke patients under 81 years were thrombolysed in the 3 h window in 2008. We have a telestroke service in a local hospital in the same region and some of the patients from our region additionally have neurovascular interventions (thrombectomy) in case of occlusion of MCA (middle cerebral artery) and severe stroke symptoms where previous studies show poor prognosis from iv. thrombolysis treatment alone. We plan to build up a 24h/7day neurointervention service in collaboration with 2 other centres in Denmark.

MRI is used as the primary examination in patients admitted under suspicion of acute stroke. The advantage of this seems to be a more precise and safe selection of patients for acute systemic thrombolysis and/or neurointervention. The strength of acute MRI is the precise diagnosis and in addition suggesting the ethiology of stroke. This has the advantage of an early individual based decision making for prophylactic treatment. Further we have documented that patients ending up with another diagnosis than stroke have shorter length of stay in hospital and therefore in the end give rise to considerable personal and economic savings.

We will show examples from our centre where the acute diagnosis using MRI may have been life saving for the patient.