Pain assessment in severe demented elderly based on facial expression

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Introduction: Pain is an important and underestimated aspect at elderly with dementia, especially when their communication skills deteriorate. Moreover, the risk of under treatment increases with the progression of dementia, despite of the increasing pharmacological possibilities and interest in pain. Facial expression can be considered as a reflection of the real, authentic pain experience. Elderly with cognitive limitations are less socially inhibited to express pain non-verbally. Therefore observation of facial expression seems an interesting pain indicator for nurses, leading to a more accurate pain assessment, which is a must for this group of patients.

Methods and Materials: The PAINVISION-project is a pilot study to set up a low-cost vision system that can continually identify pain in real-time by means of facial pattern recognition techniques. This study took place in a specific geriatric centre, and was approved by a medical ethical committee. Nineteen bedridden demented elderly with limited ability to communicate directly, were included. In six assessment sessions images of the patient's face were recorded by a new bedside two-camera system, linked to pain scores of a digital device (a tablet PC with a touch screen).

Results: At the moment, further data collection and processing is carried out to identify the most specific facial pain indicators. All results would be available in May 2010.

Conclusion: If indeed specific facial expressions contain sufficient pain information for the observer, a short and thus time efficient observational pain scale can be developed for patients who cannot express their pain verbally anymore. These findings hopefully stimulate nurses to perform more frequent pain measurements on patients with limited ability to communicate to increase the accuracy of the pain evolution. A more adequate treatment can be provided with the knowledge of a more accurate pain level, and thus improving quality of life.