



Quality improvement in postoperative pain management by continuous benchmarking (QUIPS)



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Introduction

Surveys from various countries show that the quality of acute pain management is far from being satisfactory. The reasons for inadequate pain treatment are mainly deficits in organisation and personal resources, not medical problems. Regular measurement and feedback of quality indicators is recommended to overcome these deficits (1).

Therefore, a quality improvement project for postoperative pain (QUIPS) with the focus on outcome was developed (2).



Fig. 1: Website of the QUIPS project (www.quips-projekt.de)

Methods

A set of outcome and process parameters of postoperative pain management is obtained from a random sample of surgical patients on the first postoperative day. Outcome parameters comprise the items pain intensity and pain interference (modified Brief Pain Inventory) as well as side effects and patient satisfaction. Data are sent to a data registry for analysis. Immediate feedback and peer comparisons can be retrieved by the local multidisciplinary pain management teams from a pass-word secured, inter-active website. During benchmark meetings, those hospitals with the "best" results presented their pain management concepts and discussed them with the other participants, thus allowing to identify deficits and best clinical practice.



Fig. 2: Example of online feedback

The Impact of the benchmark process was measured by comparing the parameter "maximal pain intensity" (11step NRS) before, during and at the end of this 3year-project. For statistical analysis, the Mann Whitney U-test was used.

Results

During the pilot phase, 12.389 data sets were recorded, analyzed and fed back to thirty participating wards in six hospitals. An example of a web-based feedback is shown in Fig. 2. For each ward it is possible to compare its outcome with other wards of the same surgical discipline (external benchmarking), and also to follow the performance of the own ward over the course of the project (internal benchmarking).

In five hospitals, maximal pain intensity decreased significantly ($p < .01$) after start of the project. In four of these hospitals, quality improvement was maintained until the last measurement point.

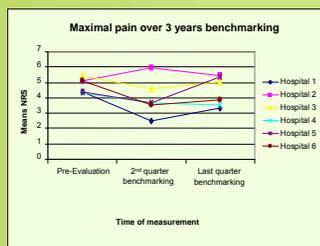


Fig. 3: Maximal pain at pre-evaluation and during the course of the project

There was no difference in any measured outcome parameter in patients with and without routine pain documentation. Chances in daily practice were often mirrored in the outcome parameters. For example, after replacement of one analgesic by another, pain intensity increased clinically meaningful and significantly in one of the participating hospitals.

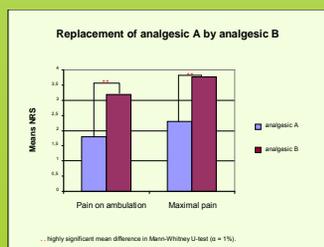


Fig. 4: Increase in pain intensity after replacement of one analgesic by another

Since end of 2006, the QUIPS project is run by the German Societies of Anaesthesiology and Surgery and supported by the SIG Acute Pain of the German IASP chapter. Currently, 60 German hospitals participate. The data registry currently comprises data from more than 39.000 patients.

QUIPS goes Europe: PAIN OUT

PAIN OUT, an international quality improvement project is based on the German QUIPS project and the IASP Task Force "International Pain Registry" (CR Chapman, R Zaslansky). PAIN OUT features not only feedback of results and benchmarking but offers physicians a comprehensive "toolkit" with a case-based Clinical Decision Support System (CDSS) and a Knowledge Library. The project was submitted to the 7th EU Framework Programme and positively evaluated by the European commission. It will start in 2009.

Conclusion

This project allows short-term on-line sub-analysis, internal, and external benchmarking. It reliably provides clinicians with information about outcome quality of postoperative pain management and can be used in daily routine. It is possible to identify effects of pharmacological and non-pharmacological interventions. However, quality improvement can only be achieved if information on outcome is transformed into changes of clinical practice. Correlation between outcome and traditionally used process parameters was poor. International cooperation could enlarge the data basis, compare nation-specific approaches in pain management, and allow to identify best clinical practice on an international level.

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1) Gordon DB et al. APS recommendations for improving the quality of acute and cancer pain management. Arch Intern Med 2005, 165: 1574-1580

2) Meissner W, Ullrich K, Zwacka S. Benchmarking as a tool of continuous quality improvement in postoperative pain management. Eur J Anaesthesiol 2006;23:142-8.

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