



Quality improvement in postoperative pain management by continuous benchmarking



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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 was developed over the past four years with the support of the German Ministry of Health (BMGS).



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. These data are sent to a "benchmark server" for analysis and peer comparisons. Finally, immediate feedback can be retrieved by the local multidisciplinary pain management teams from a password secured, inter-active website.

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.



Fig. 2: Example of online feedback

Results

Up to now, more than 12.000 data sets are 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 their outcome with other wards in the same surgical discipline (external benchmarking) and also to follow the progression 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 three of these hospitals, quality improvement was maintained until the last measurement point. However, pain increased near initial values in two hospitals. One hospital showed no improvement during the project.

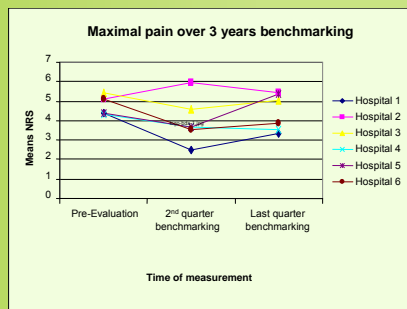


Fig. 3: Maximal pain at pre-evaluation and during the course of the project

Changes 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.

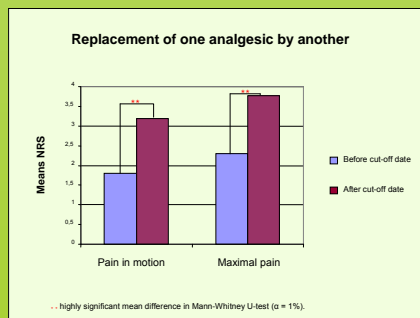


Fig. 4: Increase in pain intensity after replacement of one analgesic by another

Analysis of variance allowed identifying the relative influence of different parameters on patients' satisfaction with pain management:

Pain on movement and patients' complain not to have received enough analgesics revealed to be the most important factors.

Conclusion

This project allows short-term on-line subanalysis, 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.

Since end of 2006 the QUIPS project is supported by the German anesthesiological professional association (Bund Deutscher Anästhesisten, BDA). Currently, 26 German hospitals, one from the UK and one from Luxemburg participate, with altogether over 100 wards receiving feedback on their outcome.

Supported by a grant of the German Ministry of Health (BMGS) (217-43794-6/3)

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

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