

# Impact of quality management on process quality and intermediate outcome of antihypertensive treatment

10/2002

I. Rakovac<sup>13</sup>, R. Gfrerer<sup>13</sup>, W. Habacher<sup>13</sup>, P. Beck<sup>13</sup>, S. Seereiner<sup>23</sup>,  
R. Moser<sup>13</sup>, B. Bauer<sup>3</sup>, M. Jecht<sup>3</sup>, Z. Trajanoski<sup>2</sup>, T. R. Pieber<sup>13</sup>

1

<sup>1</sup> Institute for Medical Technologies and Health Management, Joanneum Research

<sup>2</sup> Institute of Biomedical Engineering, University of Technology Graz

<sup>3</sup> Forum for Quality Systems in Diabetes Care Germany / Austria (FQSD-D, FQSD-A)

## Outline

- What is FQSD
- Impact of antihypertensive treatment
- Study design
- Results
- Conclusion

10/2002

2

## What is Forum for Quality Systems in Diabetes Care?



- A multinational, voluntary (A/D) initiative with the goal to improve the Quality of Care of diabetic patients
- Data collection (extended BIS):
  - Application Service at [www.healthgate.at](http://www.healthgate.at)
  - Paper sheets
- Benchmarking:
  - Online any time available
  - Quarterly in paper form
- More than 70 000 patients and 82 000 BIS
- >20 000 BIS each year

10/2002

3

## Importance of antihypertensive treatment



- UKPDS 38<sup>1</sup>: tight (144/82 mm Hg) vs. less tight BP (154/87 mm Hg) control risk reduction
  - 24% in any diabetes related endpoint
  - 32% for deaths related to diabetes
  - 44% for strokes
  - 37% for microvascular complications
- Since 1998 hypertension was a major topic in FQSD quality circles

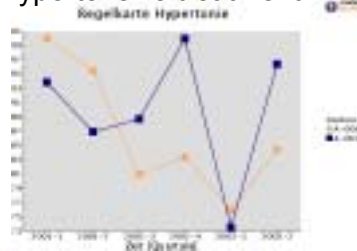
10/2002

4

<sup>1</sup> BMJ 1998; 317:703-13

## Study design

- Retrospective comparison of process quality and intermediate outcome between participating centers
- Process quality:
  - Percentage of patients with BP > 140 /90 mm Hg consecutively receiving antihypertensive treatment
- Intermediate outcome:
  - Percentage of patients achieving target BP ≤ 140 /90 mm Hg



## Hypertension Process Chart



## Results (1)

— Cross-sectional comparison of centers for year 2001:

	Number of centers	Process Quality <i>Hypertensive &amp; AHT</i> (Mean ± SD) %	Intermediate Outcome <i>Pat. with BP &lt; 140/90</i> (Mean ± SD) %
> 3 years	49	77.1 ± 16.6	65.2 ± 12.9
< 3 years	51	67.5 ± 26.7	49.4 ± 15.3
p* value		0.0324	<0.0001
95 % CI		0.7 – 18.4	10.2 – 21.5

\* unpaired t-test

## Results (2)

— Longitudinal comparison of 25 centers that collected at least 40 sheets in years 1998 and 2001:

	Process quality <i>Hypertensive &amp; AHT</i> (Mean ± SD) %	Intermediate outcome <i>Pat. with BP &lt; 140/90</i> (Mean ± SD) %
1998	74.1 ± 13.1	62.1 ± 12.0
2001	81.8 ± 26.7	69.4 ± 12.5
p* value	0.0089	0.0065
95% CI	2.1 – 13.3	2.2 – 12.3

\* paired t test

## Conclusion

- QM improves process quality
- Increased process quality improves intermediate outcome:
  - Pearson correlation coefficient  $r=0.339$ ,  $p= 0.0006$  for year 2001 data
- QM requires continuous data collection and benchmarking
- Simple, user friendly and low cost access to powerful QM software plays an important role in the acceptance of QM programs

10/2002

9

## Our software

- Online BIS collection:
  - User-friendly
  - Validation of entered data
- Benchmarking
  - 47 structure, process and outcome indicators



10/2002

10

# Acknowledgments



10/2002

& all members of



11