

Searching for factors that may reduce the use of benzodiazepines in hospitals — a survey of hospital doctors and nurses

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Background

Hypnotics and sedatives, such as benzodiazepines, are still frequently administered to older and geriatric patients in the hospital setting – in spite of safety concerns, such as addiction, confusion and increased falls. Both hospital doctors and nurses are involved in the prescription and distribution of medications.

While there are calls to reduce the use of benzodiazepines in hospitals, there is a lack of evidence-based recommendations about how to reach this aim. Therefore, it could be helpful to know more about how doctors and nurses perceive the risks and benefits of benzodiazepines.



Aims of the study

- To better understand how hospital doctors and nurses perceive the risks and benefits of benzodiazepines
- To analyze which perceived risks/benefits have the most influence upon an individual's global risk-benefit ratio

Methods

Study design Cross-sectional survey of hospital personnel
Questionnaire Survey developed by Siriwardena (Br J Gen Pract 2006; 56: 964 f.). Participants rated eleven items (6 benefits, 5 risks) on a five-point Likert scale which was later reduced to a dichotomous variable. For instance, participants' estimation of the frequency of "falls" was grouped into "always/often" or "sometimes/rarely/never". The item risk-benefit ratio had three possible options.

Participants Doctors (63/116) and nurses (73/243) from a mid- to large-sized German general hospital

Data analysis

- Descriptive analysis of the nurses' and doctors' answers about the extent of benefits, the frequency of risks and the individual's risk-benefit ratio.
- Multivariate logistic regressions to determine to what extent each individually-rated risk and benefit influences the global perception that the risks of benzodiazepines outweigh their benefits, with adjusted odds ratios (ORs) and their 95% confidence intervals (CI) as measures of effect.



Results

Doctors rated benzodiazepines as strong drugs – both in benefits and risks. Nurses estimated the benefits and risks of benzodiazepines to be somewhat weaker than doctors did. Nearly half of doctors (27% nurses) perceived the risks of benzodiazepines to outweigh the benefits whereas 19% of doctors (40% of nurses) perceived the benefits of benzodiazepines to outweigh the risks.

Strong benefits			Frequent risks			Risk-benefit ratio			Risks outweigh benefits		
	Doctors	Nurses		Doctors	Nurses		Doctors	Nurses	Predictors (strong benefit/frequent risk)	Doctors OR (CI)	Nurses OR (CI)
Reduced fear or agitation	71%	49%	Tolerance (decreased responsiveness)	68%	25%	Risks outweigh benefits	48%	27%	Reduced fear or agitation	0.7 (0.2-2.8)	0.2 (0.1-1.2)
Reduced time to get to sleep	46%	36%	Craving	67%	47%	Risks and benefits are equal	33%	33%	Reduced time to get to sleep	1.3(0.4-4.6)	2.6 (0.5-12.7)
Reduced night-time waking	37%	36%	Withdrawal effects on stopping	56%	19%	Benefits outweigh risks	19%	40%	Reduced night-time waking	0.7 (0.2-2.7)	3.5 (0.7-17.1)
Increased total sleep time	22%	30%	Falls	30%	28%				Increased total sleep time	3.1 (0.6-15.7)	0.1 (0.0-0.7)
Improved daytime function	2%	8%	Confusion	25%	22%				Falls	12.0 (1.7-84.5)	1.9 (0.4-10.6)
Feeling of being rested upon waking	0%	11%							Confusion	0.5 (0.1-3.9)	25.0 (3.4-183.0)
									Craving	7.5 (1.3-42.7)	2.6 (0.5-13.3)

Doctors' perceptions of benzodiazepines



- STRONGEST PERCEIVED BENEFIT OF BENZODIAZEPINES
Reduced fear or agitation
- MOST FREQUENT PERCEIVED RISK OF BENZODIAZEPINES
Tolerance (decreased responsiveness)
- MOST COMMON GLOBAL PERCEPTION
Risks outweigh benefits
- BELIEFS WHICH STRONGLY INFLUENCE RISK-BENEFIT RATIO
Frequent falls and craving are associated with the perception that the risks of benzodiazepines outweigh the benefits.

Nurses' perceptions of benzodiazepines



- STRONGEST PERCEIVED BENEFIT OF BENZODIAZEPINES
Reduced fear or agitation
- MOST FREQUENT PERCEIVED RISK OF BENZODIAZEPINES
Craving
- MOST COMMON GLOBAL PERCEPTION
Benefits outweigh risks
- BELIEFS WHICH STRONGLY INFLUENCE RISK-BENEFIT RATIO
Frequent confusion is associated with the perception that the risks of benzodiazepines outweigh the benefits; increased total sleep time with the perception the benefits outweigh the risks.

Conclusions for practice

A strategy to reduce benzodiazepines in the hospital should take especially two factors into account: First, doctors and nurses perceive the reduction of fear or agitation to be the strongest benefit of benzodiazepines. If benzodiazepines are reduced, effective non-pharmacological alternatives to curb fear or agitation must in turn be made available and implemented in the hospital setting, especially for older patients, who are at a higher risk of adverse effects.

Second, education programs for personnel should focus upon the factors that most-strongly influence the global risk-benefit ratio. For doctors, seminars should stress the risk of "falls" and "craving". For nurses, continuing education programs should highlight the risk of "confusion" and attempt to tone down the benefit of "increased total sleep time" in order to have a strong impact on the global risk-benefit ratio.

Project funding



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Further reading

Study protocol: Heinemann S, Weiss V, Straube K, Nau R, Grimsmann T, Himmel W et al. Understanding and reducing the prescription of hypnotics and sedatives at the interface of hospital care and general practice: a protocol for a mixed-methods study. *BMJ Open* 2016; 6(8):e011908.XX
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