



Development of an evidence-based information brochure for nurses about early detection and prevention of delirium in hematopoietic stem cell transplant patients – A practice development project

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General risk factors:	- Advanced age, > 65 years* - Low pre-transplant cognitive functioning* - Medical illness severity - Multimorbidity - Malignancy diagnosis category
Neurological risk factors:	- Dementia - History of Stroke; Intracranial bleeding
Impaired organ function:	- Renal impairment, e.g. [blood urea nitrogen*, alkaline phosphatase*, (creatinine*)] - Heart failure - Hepatic impairment - Respiratory abnormality
Systemic risk factors:	- Hypoxia - Infections - Fever - Metabolic derangements - Electrolyte disturbance (e.g. [magnesium*]) - Anaemia ([haematocrit*]) - Shock - Pain - Malnutrition - Dehydration
Drug and/or treatment related risk factors:	- Polypharmacy, e.g. many psychoactive drugs - Anticholinergic drugs - Opioid & sedative hypnotics use - Prior alcohol or drug abuse* - Drug withdrawal - Total Body Irradiation* - Type of chemotherapy regimens
Perception:	- Sensory impairment, vision and/or hearing - Lack of sensory stimuli - Abundance of sensory stimuli
Psycho-social risk factors:	- Depression - Emotional stress - Social isolation - Prolonged sleep deprivation - Sleep wake cycle disturbance - Immobility and/or low physical functioning* - Low functioning in activities of daily life

*Evidence from descriptive longitudinal studies in HSCT patients

Background

Delirium is a serious and prevalent problem in patients undergoing hematopoietic stem cell transplantation (HSCT). In a prospective longitudinal study, delirium occurred in 50% of all patients during their hospitalization for HSCT. Delirium concerns patient safety and satisfaction, poorer clinical outcome and longer hospital stays. It has been associated with impaired neurocognitive abilities and persistent distress 80 days after transplantation⁶ and a increased risk of mortality². Due to its clinical impact efforts for prevention, early recognition and prompt treatment are critical.

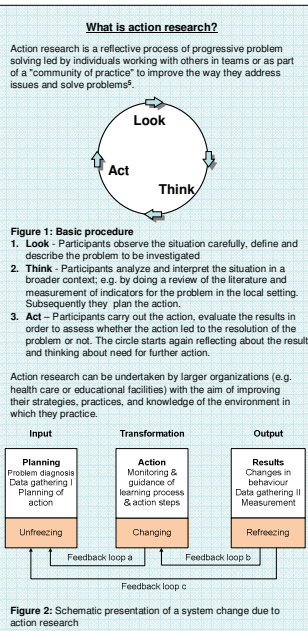
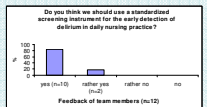
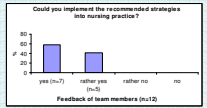
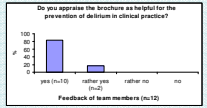
Purpose

1. To develop an evidence-based information brochure on nursing interventions to prevent delirium in hematopoietic stem cell transplant (HSCT) patients
2. To implement the brochure as an educational tool in a HSCT nursing team
3. To evaluate the team's perception on the content of the brochure and its value for daily clinical practice

Results

The brochure's content encompasses the diagnostic definition of delirium and symptom cluster associated with delirium. Further risk factors for delirium in HSCT are illustrated and eleven strategies for preventive nursing interventions are listed. 28 of the 36 team members (77%) participated in the educational session. The response rate to the evaluation was low (33%, n=12). All responders appraised the brochure as helpful (n=10) or quite helpful (n=2) for nursing practice and stated that it had been possible (n=7) or had rather been possible (n=5) to implement the recommended strategies into practice. The brochure was seen by all as instructive (n=8) or rather instructive (n=4). Every respondent mentioned that it would be helpful (n=10) or rather helpful (n=2) to use a systematic screening instrument for the early detection of delirium.

Results of the evaluation of the project by the nursing team



Methods

A practice development project on the stem cell transplantation ward of the University Hospital Basel was guided by participatory action research. The project group, led by an Advanced Practice Nurses student, met six times. First, a SWOT-Analysis (**S**trengths, **W**eakness, **O**pportunities, and **T**hreats) of the current practice of delirium prevention on the HSCT ward was conducted. Second, a systematic search of the MEDLINE database and the Cumulative Index of Nursing and Allied Health Literature (CINAHL) was performed concerning available literature in view of delirium in the hematologic, oncologic and medical patient populations. Based on the compiled evidence a brochure was developed. An educational session was prepared to discuss the content of the brochure as well as the implementation of its content in clinical practice. One month after the educational session the content of the brochure and its value for daily clinical practice was evaluated with a 10 item questionnaire consisting of four open and six 4-point multiple choice format questions.

Conclusion

We were successful in compiling evidence based information regarding delirium management in HSCT in a brochure that was disseminated in the nursing team. Evaluation showed, admittedly with a low response rate, that nurses perceived the information as helpful and had used the information in their practice. Nurses need to be able to identify patients with predisposing risk factors for delirium, actively seek ways to eliminate or decrease the severity of precipitating factors, monitor patients for early signs of delirium, and promptly seek treatment for patients with signs and symptoms of delirium. Nursing preventive strategies have to be supported by physicians. An effective cooperation as a multidisciplinary team will lead to improved patients' outcomes. Further work should focus on evaluating the use of the suggested guidelines in practice on the incidence, severity and duration of delirium in an intervention study.

Preventive nursing key strategies

The following nursing strategies are recommended and are explained in depth in the guidelines.

1. Inform the patient and close relatives about the risk of delirium
2. Provide support and assist the patient in his activities
3. Support the communication between nurse and patient
4. Enhance the patient's cognition
5. Create a wholesome patient environment
6. Administer medications judiciously and inform the patient on adverse effects
7. Maintain adequate nutrition and fluid volume, promote electrolyte balance
8. Prevent infection and detect early
9. Reduce fever and treat infection
10. Improve oxygen supply
11. Enhance the information transfer and document abnormalities



Figure 3: Info brochure developed for nursing team

References:
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 3. *Intensive Care Medicine* 2006;11(5):157-65
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 5. *Stringer Action Research in Education*. Upper Saddle River, New Jersey: Pearson Education, 2004
 6. Fain et al. *Journal of Clinical Oncology* 2007;25(10):1223-31
 7. Fain et al. *Cancer* 2005; 109(4):919-20