P0384
Paper Poster Session
Vascular and vascular access infections

Reducing access-related blood stream infections (AR-BSI) in the hemodialysis unit by monitoring and intervention

Ilana Gross*[1], Michal Dranitzki Elhalal[1], Carmela Schwartz[1], Mali Razon[1], Larisa Lipkin[1], Allon Moses[1], Shmuel Benenson[1]

[1]*Hadassah-Hebrew University Medical Center, Jerusalem, Israel*

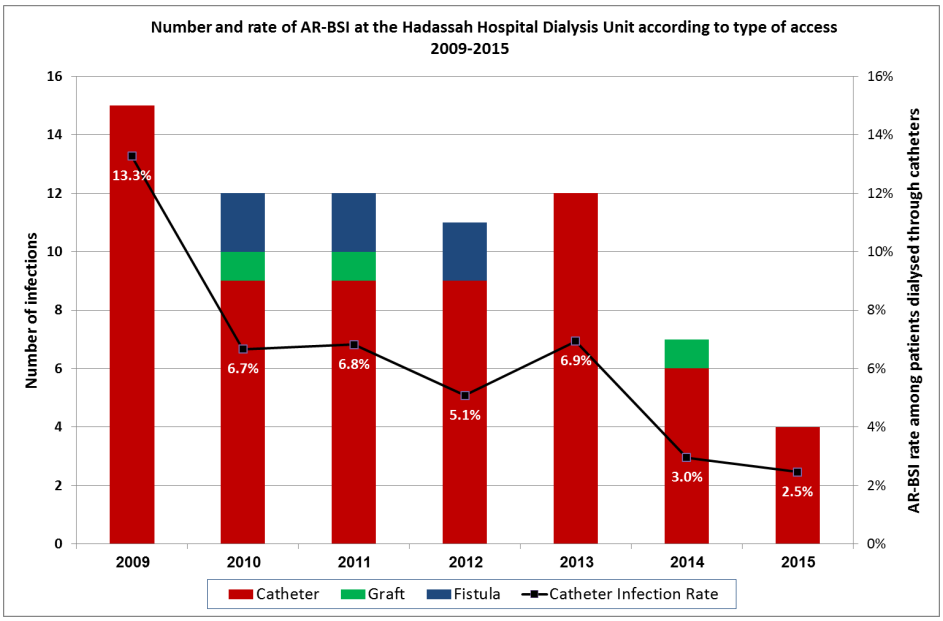
Background: Access related blood stream infections (AR-BSI) in dialysis patients are a significant cause for morbidity and mortality. The risk of infection is higher among patients using vascular catheters than in patients using arteriovenous fistulas or grafts as dialysis access. In January 2009 we established an ongoing intervention program in the 44-patients dialysis unit of Hadassah Medical Center in order to reduce AR-BSIs and to improve quality of care.

Material/methods: The basic component of the intervention is ongoing monitoring of AR-BSI rate. A dedicated dialysis nurse prospectively collects infection data using a pre-prepared data collecting form as part of the daily routine. Detailed information is recorded concerning dialysis patients with positive blood cultures, hospitalizations and new antibiotic treatments. Supposed cases of AR-BSI are discussed monthly with an infection prevention nurse and an infectious diseases physician, and AR-BSIs are defined according to CDC surveillance definitions. Feedback of AR-BSI rate per 100 patient months is sent quarterly to the chairman of the unit and head nurse and to the hospital administration.

Meetings with the unit staff to discuss the findings are taking place routinely. Additionally, we updated the guidelines for the processes of patient connection to the dialysis machine, dressing exchange and disconnection and prepared a new kit containing all the needed equipment and organized according to the order of use. In the beginning of 2015, observations during patient care, conducted routinely by the unit nurses, were implemented.

Results: During the intervention the behavior of the staff according to the guidelines for AR-BSI prevention has improved. Due to a growing number of severe and complicated patients over the study years, the mean proportion of patients dialysed through vascular catheters increased during the intervention period from 22% to 40% ($p<0.001$). The rate of AR-BSI per 100 patient months, among patients dialysed through catheters, decreased gradually from 13.3% during 2009 to 2.5% during 2015 ($p=0.001$) (graph).

Conclusions: The intervention resulted in an improvement in staff behavior according to the guidelines and leaded to a significant decrease in AR-BSI rate, even though the proportion of patients dialysed through catheters increased. Ongoing surveillance and feedback were central components of the intervention in our dialysis unit.


Number and rate of AR-BSI at the Hadassah Hospital Dialysis Unit according to type of access
2009-2015
Number of infections
AR-BSI rate among patients dialysed through catheters
16
14
12
10
8
6
4
2
0
16%
14%
12%
10%
8%
6%
4%
2%
0%
13.3%
6.7%
6.8%
5.1%
6.9%
3.0%
2.5%
2009
2010
2011
2012
2013
2014
2015
Catheter
Graft
Fistula
Catheter Infection Rate