**Peritoneal dialysis related infections according to BMI in patients with Tenckhoff catheter inserted with the Seldinger technique**

***Background***: Obesity is often regarded as a risk factor for peritonitis and exit-site/tunnel infections (ESI) in peritoneal dialysis (PD) patients; however data describing the influence of body mass index (BMI) on the incidence of PD-related infections are limited. Furthermore, there is paucity of information regarding PD-related infections in patients with Tenckhoff catheter insertion by Seldinger technique with respect to BMI.

***Methods***: We performed a retrospective cohort study of all adult patients receiving PD in our Unit with Tenckhoff catheter insertion by Seldinger technique (under local anaesthetic). Inclusion criteria were occurrence of any PDI during the 5-year period 2011 – 2015 and minimum patient survival 24 months. Causative pathogens were recorded. Patients were stratified according to their BMI in the following categories for analysis: BMI=18.5-24.9 (normal BMI, *n*=12), BMI=25.0-29.9 (overweight, *n*=18), BMI=30.0-34.9 (moderate obesity, *n*=11), and BMI>35.0 (severe obesity, *n*=5).

***Results***: Amongst all patients receiving PD in our Unit, 46 patients (mean age: 59 years, range: 19-87 years) experienced 70 peritonitis episodes and 32 ESI. Mean BMI was 29.0 ± 5.0 kg/m2, and mean PD duration was 768 days (range: 61-1542 days). The causative pathogen was Gram positive in 8 (25%) of the ESIs and 26 (37%) of the peritonitis events, Gram negative in 14 (44%) of the ESIs and 8 (11%) of the peritonitis events, other in 7 (22%) of the ESIs and 9 (13%) of the peritonitis events, and no pathogen was isolated in 3 (9%) of the ESIs and 27 (39%) of the peritonitis events,.

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|  | **BMI=18.5-24.9** | **BMI>35.0** |
| Infection rate (events/year) | 1.16 | 0.8 |
| Time to first peritonitis (days) | 246±198 | 660±439 |
| Time to first ESI (days) | 257±187 | 357±274 |
| Time to first PD procedure (days) | 358±432 | 532±665 |

A trend towards decreasing annual infection rate and longer time to first PD-peritonitis, ESI and PD procedure was observed with increasing BMI, although none of these differences reached statistical significance (see table). Among different BMI groups no differences were noticed with regards to the causative pathogens.BMI was correlated with the time to first PD-peritonitis (R=0.26, *p*=0.023) - the higher the BMI the longer the infection-free interval since PD start. The time to first PD-peritonitis in turn was strongly associated with 2-year survival of PD modality (R=0.20, *p*<0.001) – the longer the time to first PD-peritonitis the longer the PD modality survival.

***Conclusions***: Contrary to previous reports, obesity was associated with a trend for longer time to first PD-peritonitis, ESI and PD procedure for patients with Tenckhoff catheter inserted by Seldinger technique. Obesity was also associated with a trend for lower incidence rate of PD infections, and a better 2-year PD modality survival. Although confounding factors or biases cannot be ruled out, these findings could be partially attributed to specific technical aspects of the Tenckhoff catheter insertion technique. Large-scale prospective studies are needed to confirm these findings.