

**Abstract Type : Poster**  
**Presentation No. : PDL 008**

## **Risk Factors and Clinical Outcomes Related to Early Onset Peritonitis in Peritoneal Dialysis Patients**

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**Objectives:** Peritoneal dialysis (PD) related peritonitis is one of the important risk factors of failure of PD. However, the impact of early peritonitis on PD survival is not clearly proven. This study aims to analyze the risk factors and outcomes of early-onset peritonitis.

**Methods:** We retrospectively enrolled 614 patients who had had at least one episode of peritonitis from 1996 to 2017. According to time from start of PD to first episode of peritonitis, patients were divided into early-onset ( $\leq 6$  months) and late-onset ( $> 6$  months) peritonitis group. Baseline demographics and clinical outcomes were compared between the two groups. The risk factors associated with early-onset peritonitis were analyzed.

**Results:** Of the 614 patients, 164 (26.7%) patients developed their first episode of peritonitis within 6 months. The early-onset peritonitis group had more prevalence of diabetes mellitus, lower serum albumin level at initiation of PD and higher incidence of PD peritonitis than the late-onset peritonitis group ( $P < 0.05$ ). Multivariate logistic regression analysis showed that factors associated with early-onset peritonitis were diabetes mellitus (OR 1.510, 95% CI 1.036-2.201,  $P = 0.032$ ) and a lower serum albumin level at the start of PD (OR 0.629, 95% CI 0.434-0.910,  $P = 0.014$ ). While there were no differences between the two groups for technical failure and mortality, a negative correlation was observed between the time to first peritonitis and technical failure (HR 0.995, 95% CI 0.991-0.999,  $P = 0.023$ ) and mortality (HR 0.991, 95% CI 0.987-0.997,  $P = 0.001$ ). In the Spearman analysis, the time to first peritonitis was negatively correlated with the incidence of peritonitis ( $r = -0.437$ ,  $P = 0.000$ ).

**Conclusions:** Diabetes mellitus and a lower serum albumin level at initiation of PD were independent risk factors of early-onset peritonitis. Early-onset peritonitis was associated with higher incidence of peritonitis, technical failure and mortality.