척수재활

게시일시 및 장소 : 10 월 19 일(토) 08:30-12:30 Room G(3F)

질의응답 일시 및 장소 : 10 월 19 일(토) 11:00-11:30 Room G(3F)

**P 3-56**

## Relevant Factors of Clostridium Difficile Infection in Spinal Cord Injuries

Ju Hyun Son[1*], So Jung Kim[1], In Hye Kim[1], Sungchul Huh[1], Hyun-Yoon Ko[1,2]

Pusan National University Yangsan Hospital, Department of Rehabilitation Medicine[1], Pusan National University School of Medicine, Department of Rehabilitation Medicine[2]

**Introduction**

Clostridium difficile infection (CDI) is a major cause of health-threatening infectious diarrhea in patients with chronic disabling conditions. Antibiotics, gastric acid inhibitors, nonselective NSAIDs, inflammatory bowel disease, diabetes, leukemia or lymphoma, renal failure, and solid cancers are known risk factors of CDI. The purpose of the study is to investigate the related factors of CDI in patients with spinal cord injury (SCI).

**Methods**

We reviewed medical records of 69 patients with SCI diagnosed with CDI. The use of antibiotics (cephalosporins, fluoroquinolones, and clindamycin), probiotics, PPIs, H-2 blockers, nonselective NSAIDs, anticholinergic drugs and diabetes were considered as risk factors of CDI. Descriptive analysis and Fisher's exact test were performed.

**Results**

There were 55 males and 14 females with SCI, and the mean age was 57 years (Table 1). There were 51 tetraplegics and 18 paraplegics. The number of ASIA Impairment Scale (AIS) A was 42, B was 8, C was 12 and D was 7. The ratio of each factor is as follows; antibiotics 65.2% (cephalosporin 30.4%, fluoroquinolone 29.0%, clindamycin 4.3%), PPI 43.5%, anticholinergic drug 27.5%, probiotics 20.3%, H-2 blocker 17.4%, nonselective NSAID 13.0% and diabetes mellitus 13.0% (Table 2, Fig. 1). There was no statistically significant difference between each subgroup divided by gender, age, neurological level of injury, completeness of injury, and duration of PPI use (Table 3).

**Conclusion**

In this study, the incidence of CDI was higher in the order of antibiotics, PPI, and anticholinergics. The use of anticholinergics in addition to antibiotics and PPIs, which are known to be important causes of CDI, is associated with a high incidence of CDI. A well-designed study is needed to evaluate the association between anticholinergics and CDI in patients with SCI.

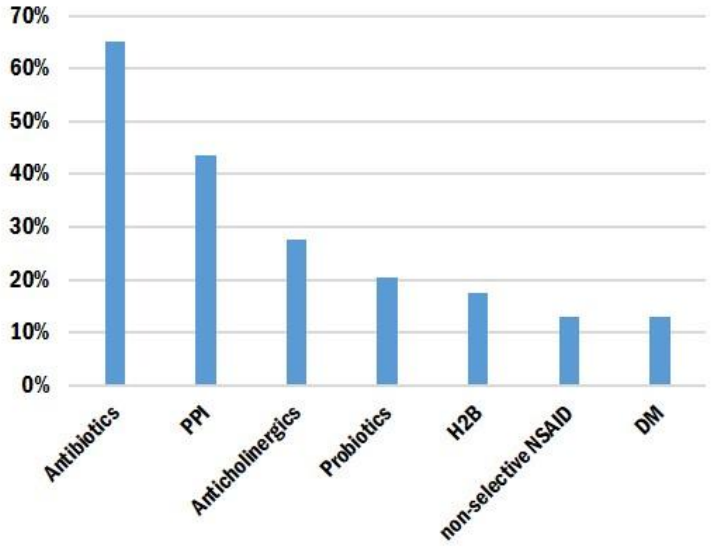


Figure 1. Priority of relevant factors proportion in SCI patients with CDI

Table 1. Demographics and clinical characteristics of the subjects

| Variables | Number |
|---|---|
| Age (years) | 55.4 ± 15.7 |
| Gender | |
| Male | 55 (79.7%) |
| Female | 14 (20.3%) |
| Height (cm) | 169.6 ± 8.3 |
| Weight (kg) | 61.3 ± 11.9 |
| Neurologic level of injury | |
| Tetraplegia | 51 (74.9%) |
| Paraplegia | 18 (26.1%) |
| AIS | |
| A | 42 (60.9%) |
| B | 8 (11.6%) |
| C | 12 (17.4%) |
| D | 7 (10.1%) |

Table 3. Fisher's exact test and p-values of variables in SCI patients with CDI

| Variables | Sex (n=69) Male vs. Female | Age (n=69) ≥65 vs. <65 years | NLI (n=69) Cervical vs. Non-cervical | Completeness (n=69) Complete vs. Incomplete injury | PPI duration (n=26) ≥30 vs. <30 days |
|---|---|---|---|---|---|
| Antibiotics | *p=0.332* | *p=0.164* | *p=0.385* | *p=0.790* | *p=0.306* |
| Cephalosporin | *p=0.742* | *p=0.784* | *p=0.556* | *p=0.176* | *p=0.429* |
| Fluoroquinolone | *p=0.349* | *p=0.603* | *p=1.000* | *p=0.799* | *p=0.713* |
| Clindamycin | *p=0.100* | *p=1.000* | *p=1.000* | *p=0.556* | *p=1.000* |
| Probiotics | *p=0.724* | *p=0.135* | *p=0.746* | *p=0.772* | *p=0.429* |
| Anticholinergics | *p=0.747* | *p=0.772* | *p=0.763* | *p=0.589* | *p=0.652* |
| PPI | *p=0.760* | *p=0.114* | *p=0.402* | *p=0.447* | - |
| H-2 blocker | *p=1.000* | *p=0.055* | *p=0.747* | *p=0.767* | *p=1.000* |
| Non-selective NSAID | *p=1.000* | *p=0.487* | *p=0.140* | *p=0.319* | *p=0.580* |
| DM | *P=0.373* | *p=0.148* | *p=0.226* | *p=1.000* | *p=0.429* |