OBJECTIVE
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Intraoperative Hypotension due to the Oral
administration of 5-Aminolevulinic Acid for Photodynamic Diagnosis in Patients with Bladder Cancer
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INTRODUCTION

The patients experienced hypotension after the oral administration of 5-ALA in this study. We analysed the pre- and intra-operative SBP to safely perform a TURBT with PDD.

METHODS

The patients included 109 consecutive patients who underwent PDD-TURBT in our institution and were categorized as the PDD group. The clinical data were collected, and the perioperative SBP and vasopressor usage were analysed. On the other hand, the consecutive patients under general conventional TURBT (without the use of 5-ALA) were included and categorized as the control group.

RESULTS:

The SBP before anesthesia, lowest SBP from the anesthesia induction to the start of operation, and lowest SBP during operation were significantly lower in the PDD group than those in the control group. The rate of vasopressor use was significantly higher in the PDD group. Furthermore, using the multivariate analysis, we found that the general anesthesia and regular use of RAS inhibitor impose a higher risk (lowest SBP from anesthesia induction to the start of operation <80 mmHg).

CONCLUSIONS:

The oral intake of 5-ALA obviously cause a drop in the intraoperative SBP. Therefore, urologists and anesthesiologists should consider withdrawal of RAS inhibitors and monitor the SBP carefully during PDD-TURBT.

RESULTS

In the present study, we aimed to prove that 5-ALA does not cause perioperative hypotension after oral 5-ALA intake (e.g. a case shown on the right side).

It took 60 minutes of nap time infusion until SBP increased to 90 mmHg. Then, spinal anesthesia was started at 9:00 AM.

Patients & methods

Table 1: The comparison of the patient characteristics and perioperative data.

Legend: ASA: American Society of Anesthesiologists

Table 2: Logistic regression analysis to predict the SBP >80 mmHg from anesthesia induction to the operation.

Univariate analysis

Multivariate analysis

Discussion and Conclusion

This is the first report about hypotension due to orally administered 5-ALA in patients with NMIBC. Hypotension due to 5-ALA was reported in only few studies (1). The mechanism of hypotension due to the oral intake 5-ALA remains unclear.

We showed that the oral administration of 5-ALA in PDD-TURBT was more likely to cause hypotension in patients with NMIBC. Regular RAS inhibitor use and general anesthesia might pose a hypotension risk.

Limitations: small sample size, retrospective study, time delay, differences in anesthesiologists.

References