

Comparison between transurethral plasma kinetic resection (TUPKR) and intra-bladder perfusion combined TUPKR in patients with cystitis glandularis *via* evaluating SAS and QOL scores.

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Abstract

Objective: To compare the differences between bipolar Transurethral Plasma Kinetic Resection (TUPKR) and pirarubicin intrabladder perfusion combined TUPKR in patients with cystitis glandularis by evaluating Self-Rated Anxiety (SAS) and Quality of Life (QOL).

Methods: A total of 128 cases patients with cystitis glandularis diagnosed in the Second Affiliated Hospital of Zhengzhou University from 2009 to 2016 were collected and followed up for one year. They were divided into two groups: TUPKR group and pirarubicin intrabladder perfusion combined TUPKR (IPC-TUPKR) group, SAS and QOL score data were collected after admission and postoperative 1 year, statistical analysis of differences between them.

Results: There was significant difference between the SAS and QOL scores of the two groups at the 12-month follow-up ($p < 0.05$); There was significant difference in SAS and QOL scores of TUPKR group between admission and 12-month follow-up ($p < 0.05$); but there was no significant difference in SAS and QOL scores of IPC-TUPKR group between admission and 12-month follow-up ($p > 0.05$).

Conclusions: The treatment of cystitis glandularis by pirarubicin intrabladder perfusion combined TUPKR may increase SAS and QOL scores of patients than TUPKR treatment.

Keywords: TUPKR, Intrabladder perfusion combined TUPKR, Self-rated anxiety, Quality of life.

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Introduction

Cystitis glandular, a proliferative and metaplastic condition of the bladder mucosa, was first reported by Von in 1887 [1]. It has been considered a rare disease for long [2], but the incidence increases year by year with the popularity of urinary cystoscopy and the increase of pathological awareness [3-4]. At present, the cause of cystitis glandular is not clear [5-8], may be related to vesical calculus, infection, obstruction [9-10]. There are many available clinical treatment methods of the disease, some scholars advocate surgery combined with drug bladder irrigation, some other scholars believe that postoperative bladder irrigation not only cannot prevent the progress of glandular cystitis, and also may aggravate the clinical symptoms and burden on patients. Therefore, we collected 128 cases of cystitis glandular patients diagnosed in the Second Affiliated Hospital of Zhengzhou University from 2009 to 2016 and followed up for 1 year. According to the different treatment methods, they were divided into two groups: TUPKR (Bipolar Transurethral Plasma Kinetic Resection) group and pirarubicin intrabladder perfusion combined TUPKR (IPC-TUPKR) group. The SAS and QOL score which for the treatment of glandular cystitis to provide better help. Analysis the SAS and QOL score of 1 year after

surgery, which may be helpful for the treatment of glandular cystitis.

Materials and Methods

General material

A total of 77 patients execute TUPKR (Olympus, Japan) surgery, divided into TUPKR group, including 35 males and 42 females. Their age ranged from 28 to 75 years old with an average age of (46.45 ± 9.57) years old. The course of disease was 6-18 months (10.96 ± 5.23 months) before admission and the body mass index was 23.35 ± 1.67 . Remaining 51 patients who were treated with pirarubicin (Shenzhen main Luck Pharmaceuticals Inc. Shenzhen, China) intrabladder perfusion combined TUPKR were divided into IPC-TUPKR group, in which there were 21 males and 30 females aged between 29 and 69 years old with an average age of (45.98 ± 9.47) . Pre-admission duration was 5-21 months (mean, 6.76 ± 3.19 months) with a mean body mass index of 23.49 ± 1.41 . Before enrolment, patients and their family had already been informed of the content of this study, and signed the written informed consent. Comparison of the general data between the two

groups showed no statistically significant difference, suggesting that their general data were comparable ($p>0.05$).

Methods

TUPKR and intrabladder perfusion combined TUPKR surgery **consult** the method of operation of Xiong Lin et al. [11]. At the time of admission, SAS and QOL questionnaires were filled in and scores were calculated. They were reassessed 12 months after surgery. This research was approved by the Ethical Committee of The Second Affiliated Hospital of Zhengzhou University according to the declaration of Helsinki promulgated in 1964 as amended in 1996; the approval number is 2017-03-16.

Evaluation criteria

Inclusion criteria: All cases must be diagnosed as pathological glandular cystitis, and invalid in simple anti-inflammatory treatment. **Exclusion criteria:** patients with malignant bladder tumour, combined with urinary tuberculosis; complicated by severe cardiovascular, liver and kidney disease, past history of severe mental disorders.

Statistical methods

Data were analysed using SPSS 19.0, in which measurement data were presented as ($\bar{x} \pm s$), and t-test was performed for intergroup comparison, while the chi-square test was applied for the comparison of count data. $p<0.05$ was statistically significant.

Results

Preoperative SAS scores of two groups of patients, $p=0.897>0.05$, the difference was not statistically significant. Preoperative QOL scores of two groups of patients, $p=0.635>0.05$, the difference was not statistically significant (Table 1).

Table 1. Comparison of preoperative SAS and QOL scores between the two groups.

| Score | TUPKR group n=77 | IPC-TUPKR group (n=51) | t | p |
|---------------------|---------------------|------------------------------|------|-------|
| preoperative SAS | 40.22 ± 6.58 | 39.95 ± 6.69 | 0.09 | 0.897 |
| preoperative QOL | 4.41 ± 0.78 | 4.43 ± 0.75 | 0.51 | 0.635 |

Compared the postoperative 12 months SAS scores of the two groups of patients, $p=0.001$, the difference was statistically significant. When comparing the QOL scores of the two groups of patients postoperative 12 months, finding $p=0.015$, the difference was statistically significant (Table 2).

Table 2. Comparison of postoperative 12-months SAS and QOL scores between the two groups.

| Score | TUPKR group n=77 | IPC-TUPKR group (n=51) | t | p |
|----------------------|---------------------|------------------------------|------|-------|
| postoperative SAS | 36.52 ± 5.91 | 40.66 ± 5.23 | 8.09 | 0.001 |
| postoperative QOL | 2.62 ± 1.01 | 3.93 ± 1.18 | 5.12 | 0.015 |

Compared the SAS scores of preoperative and postoperative 12-month in patients, who are in the TUPKR group, finding $p<0.05$, the difference was statistically significant. Comparison of the SAS scores of preoperative and postoperative 12-month in patients, who are in the IPC-TUPKR group, finding $p>0.05$, the difference was not statistically significant (Table 3).

Table 3. Comparison SAS scores of preoperative and postoperative 12-months between the two groups.

| Group | Preoperative SAS | Postoperative SAS | t | p |
|------------------------------|---------------------|----------------------|------|-------|
| TUPKR group | 40.22 ± 6.58 | 36.52 ± 5.91 | 2.91 | 0.009 |
| IPC-TUPKR group (n=51) | 39.95 ± 6.69 | 40.66 ± 5.23 | 0.94 | 0.337 |

Compared the QOL scores of preoperative and postoperative 12-month in patients, who are in the TUPKR group, finding $p<0.01$, the difference was statistically significant. Comparison of the QOL scores of preoperative and postoperative 12-month in patients, who are in the IPC-TUPKR group, finding $p=0.089$, the difference was not statistically significant (Table 4).

Table 4. Comparison QOL scores of preoperative and postoperative 12-months between the two groups.

| Group | Preoperative QOL | Postoperative QOL | t | p |
|------------------------------|---------------------|----------------------|------|-------|
| TUPKR group (n=77) | 4.25 ± 0.84 | 2.62 ± 1.01 | 9.45 | 0.009 |
| IPC-TUPKR group (n=51) | 4.43 ± 0.75 | 3.93 ± 1.18 | 1.79 | 0.089 |

Discussion

There are many ways in the treatment of cystitis glandular, roughly divided into drug treatment and surgical treatment and the combination of the above two. Surgical treatment is divided into endovascular surgery and open surgery [12-13]. Drug therapy is divided into various bladder instillations [14-16], as well as combinations of the two [17-19]. Efficacy of various reports vary, because of the lack of a unified control, the efficacy of each method is difficult to compare.

Domestic meta-analysis of the relevant information suggests that transurethral endovascular surgery combined with multiple bladder drug infusion after treatment is better than the efficacy

of simple endovascular surgery [20]. But in this study, the preoperative SAS scores in TUPKR group and IPC-TUPKR group were 40.22 ± 6.58 and 39.95 ± 6.69 , respectively. There was no significant difference between the two groups in preoperative SAS score, indicating that there was no significant difference between the two groups, The patient's preoperative SAS scores were essentially the same; the QOL score performance consistently. The preoperative and postoperative 12-months SAS scores of patients in TUPKR group was statistically significant difference; so does the QOL score of the patients in TUPKR group, it demonstrated that the status of anxiety and quality of life have significantly improved in patients who got TUPKR surgery after 12-months. There was no significant improvement between preoperative, 12 months after operation in SAS and QOL scores, and the difference was statistically significant between TUPKR group and IPC-TUPKR group indicating that TUPKR combined with postoperative perfusion did not improve the anxiety and quality of life in patients, At the same time may increase the patient's anxiety status and decrease the quality of life.

Although many scholars think that endovascular surgery combined with drug infusion is the preferred treatment of cystitis glandularis in past [21], but some other scholars hold the opposite opinion [22], the results of the study are consistent with the latter. Due to the limited number of cases in this study, the conclusions drawn may require further multi-center and long-term follow-up validation.

In conclusion: transurethral plasma kinetic resection combined with multiple pirarubicin perfusions may increase anxiety and decrease quality of life in the treatment of cystitis glandularis.

Limitations of the Study

Sample was small and patient's follow-up was deficient.

Conflict of Interests

The authors declare that there is no conflict of interests in the publication of this paper.

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