THE MANAGEMENT OF THE RECTAL COMPLICATION INCLUDING RECTOURETHRAL FISTULA AFTER LOW DOSE RATE (LDR) BRACHYTHERAPY FOR PROSTATE CANCER.

Hypothesis / aims of study
Rectal complication such as radiation proctitis is a common complication of pelvic radiation, however when it gets worse, it could be progresses to severe disease such as rectourethral fistula. We evaluate the efficacy of rectal complication treatment focused on mesalazine therapy in patient who underwent low dose rate (LDR) brachytherapy for prostate cancer.

Study design, materials and methods
Between 2007 and 2014, 258 patients who underwent prostate low dose rate (LDR) brachytherapy for prostate cancer were included. Perioperative data and postoperative rectal complication including rectourethral fistula were retrospectively analyzed. The efficacy of mesalazine was assessed according to the Radiation Therapy Oncology Group (RTOG) toxicity scale and rectal bleeding score of Subjective Objective Management Analytic (SOMA) scale for alleviation of clinical symptoms of rectal toxicity.

Results
Total 39 (15.1%) patients (mean age 63.9 years) complained the rectal symptoms. Among them, 35 patients were treated with oral mesalazine and/or mesalazine suppository.

The first symptoms of radiation proctitis, including rectal pain, bleeding, tenesmus, stool frequency occurred at a mean of 17.5 ± 17.1 months (range, 1-91 months) following LDR brachytherapy. All of the patients had experienced a first episode of rectal complication. Sigmoidoscopy confirmed the presence of inflammatory changes and bleeding or fistula in 28 (71.8%) patients. No patients developed severe rectal bleeding which need endoscopic electrocoagulation.

After mesalazine treatment, the mean RTOG toxicity scale were reduced from 1.6 ± 0.9 to 0.8 ± 0.9 (p<0.001) after mean 7.6 ± 12.6 months of treatment. There was also a reduction in the mean symptom scores for rectal bleeding of SOMA scale(1.7 ± 0.7 - > 1.0 ± 0.8, p<0.001). (Table 1)

During the study, two patients developed rectourethral fistula. One of them complained anal rectal pain accompanied by urinary urgency and nocturia at 12 month and treated with oral mesalazine and mesalazine suppository. At 23 month, he developed rectourethral fistula with urinary tract infection which diagnosed by sigmoidoscope (Figure 1A). At that time, he treated with urethral glue deposition (Figure 1B)., however, no sealing effect was shown 2 weeks follow up sigmoidoscope. With the steady mesalazine and povidone-iodine suppository treatment, the fistula was gradually improved after 29 month. The fistula was sealed at last 72month follow up (Figure 1C).

Other patients complained constipation and also showed anal stricture at 20 month after LDR brachytherapy. He also showed rectal bleeding, however only congestion was reported in consecutive sigmoidoscope and oral mesalazine and mesalazine suppository and corticosteroid suppository were treated. At 30 month, urine loss via the anus and obvious feces in his urine were founded and rectourethral fistula was confirmed by sigmoidoscope. The urethral stent was applied, however it was not effective.

The rectal bleeding and fistula was improved under mesalazine and corticosteroid treatment at last follow-up (at 70 month). There was no complication case using mesalazine and patients were tolerable with mesalazine treatment.

Interpretation of results
Most (60.0%) of rectal complication patients presented RTOG toxicity grade ≤ 1. Mesalazine therapy was effective for rectal bleeding and the patient with SOMA bleeding grade ≥3 was significantly decreased after meusalazine treatment (n=20 (51.3%) -> n=12 (34.3%)). Rectourethral fistula after LDR brachytherapy also improved after steady mesalazine treatment.

Concluding message
The oral and topical mesalazine therapy could be a safe and effective treatment for rectal complication after LDR brachytherapy. Although primary resection and closure of fistula with colostomy has been known as a best treatment of rectourethral fistula, combination of oral and topical mesalazine therapy also could be an effective and non-invasive treatment for selective patient.
Table 1. Rectal toxicity score of pre- and post-treatment

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<thead>
<tr>
<th></th>
<th>RT0G scale</th>
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<th>Bleeding scale of SOMA scale</th>
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<tbody>
<tr>
<td></td>
<td>Pre-treatment (n, %)</td>
<td>Post-treatment (n, %)</td>
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Figure 1.

References
3. Cancer 2009;May 1; 1827-1839

Disclosures
Funding: none Clinical Trial: No Subjects: HUMAN Ethics Committee: Bundang Cha irb Helsinki: Yes Informed Consent: No