

## Department of Urology

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### General Summary

We performed research in the following areas: urologic oncology, urinary tract infection and sexual transmitted diseases, urodynamics and erectile dysfunction, the kidney and adrenal gland, endourology, and extracorporeal shockwave lithotripsy.

### Research Activities

#### *Urologic oncology*

1. Basic research: We performed several projects to clarify the biology of urological malignancies and develop new therapeutic tools. Most projects were reported at the annual meeting of Japanese Urological Association and the American Urological Association. The projects are as follows:

- 1) Proteomic analysis of new biomarkers for prostate cancer and urothelial cancer
- 2) Gene therapy for urological malignancies
- 3) Establishment and biological analysis of a new prostate cancer model derived from Japanese patients
- 4) Research on prostate cancer stem cells
- 5) Basic research in neurourology and female urology

2. Clinical research: Several clinical studies are in progress at our institution. Some results have already been reported at the annual meeting of the Japanese Urological Association

- 1) Study of seeds and hormones for intermediate-risk prostate cancer
- 2) Clinical study of high dose rate brachytherapy with external beam radiation therapy for high-risk prostate cancer

#### *Genitourinary tract infection*

1. Basic research on the antimicrobial resistance of *Neisseria gonorrhoeae*, especially resistance mechanisms in cephem-resistant *N. gonorrhoeae*
2. Clinical surveillance of gonococcal urethritis in the Tokyo metropolitan area
3. Clinical study of additive therapy with clarithromycin and ceftoram for male gonococcal urethritis
4. Psychological education for chronic prostatitis/chronic pelvic pain syndrome

#### *Neurourology and urodynamics*

1. Study of dysuria

Clinical assessment of elderly patients with dysuria treated with low-dose medications to avoid problematic side effects

Efforts were made to advertise the importance of the frequency-volume chart.

## 2. Study of nocturia

The relation between cardiac insufficiency and nocturia was demonstrated by means of brain natriuretic protein and the frequency-volume chart.

We started a study of the relation between dyssomnias and dysuria using the International Prostate Symptom Score and the Pittsburgh Sleep Quality Index.

### *Kidney and adrenal gland*

1. Clinical study of postoperative steroid replacement for preclinical Cushing syndrome
2. Clinical study of the effectiveness of adrenal venous sampling for primary aldosteronism
3. Laparoscopic surgery for adrenal tumors

### *Endourology and extracorporeal shockwave therapy*

1. Extracorporeal shockwave therapy for Peyronie disease
2. Holmium-yttrium-aluminum-garnet laser ablation of the prostate for benign prostatic hypertrophy

## Publications

**Saito S, Murayama Y, Pan Y, Taima T, Fujumura T, Murayama K, Sacilek M, Egawa S, Ito A, Ishidoya S, Nakagawa H, Kato M, Satoh M, Endo M, Arai Y.** Haptoglobin- $\beta$  chain defined by monoclonal antibody RM2 as a novel serum marker for prostate cancer. *Int J Cancer* 2008; **123**: 633-40.

**Yamazaki H.** Prostate cancer postoperative long-term management. *Jpn Med J* 2008; **4410**: 44-7.

**Kiyota H, Kimura T, Egawa S, Onodera S.** Urinary tract infections. *Shindan to Chiryō* 2008; **96**: 53-9.

**Furuta A, Kita M, Suzuki Y, Egawa S, Chancellor MB, de Grot WC, Yoshimura N.** Association of overactive bladder and stress urinary incontinence in rats with pudendal nerve ligation injury. *Am J Physiol Regul Integr Comp Physiol* 2008; **294**: 1510-6.

**Furuta A, Jankowski RJ, Pruchnic R, Egawa S, Yoshimura N, Chancellor MB.** Physiological effects of human muscle-derived stem cell implantation on urethral smooth muscle function. *Int Urogynecol J* 2008; **19**: 1229-34.

**Haga K<sup>1</sup>, Tomioka A<sup>1</sup>, Liao CP<sup>2</sup>, Kimura T, Matsumoto H<sup>1</sup>, Ohno I<sup>1</sup>, Hermann K<sup>1</sup>, Logg CR<sup>1</sup>, Jiao J<sup>1</sup>, Tanaka M<sup>1</sup>, Hirao Y<sup>1</sup>, Wu H<sup>1</sup>, Kruse CA<sup>1</sup>, Roy-Burman P<sup>2</sup>, Kasahara N<sup>1</sup> (<sup>1</sup>UCLA, <sup>2</sup>USC).** PTEN knockout prostate cancer as a model for experimental immunotherapy. *J Urol* 2008; **181**:

354-62.

**Hayashi N, Urashima M, Kuruma H, Arai Y, Kuwao S, Iwamura M, Egawa S.** The maximum tumor length in biopsy cores as a predictor of outcome after radical prostatectomy. *BJU Int* 2008; **101**: 175-80.

**Hasegawa Y, Suzuki Y, Egawa S.** The management of urinary tract in children with spina bifida. *Nerv Syst Child* 2008; **33**: 40.

**Yamada H, Kimura T, Miki K, Kishimoto K, Ohishi Y, Mori Y, Egawa S.** Preoperative prediction of remnant renal function in nephron-sparing surgery: the usefulness of 99mTc-mercapto-acetyl-triglycine scintigraphy. *Hinyokika Kyo* 2008; **54**: 89-93.

**Yamamoto T, Egawa S.** Localized prostate cancer: concerns in its grading and staging. *Urol Sur* 2008; **21**: 3-5.

**Koike Y, Kosugi S, Yamamoto T, Shimomura T, Ikemoto I, Takahashi H.** Prostatic carcinoma metastasis to the penis. *Rinsho Hinyokika* 2008; **62**: 251-3.

## Reviews

**Miki J, Rhim JS.** Review prostate cell cultures as *in vitro* models for the study of Normal stem cells and cancer stem cells. *Prostate Cancer Dis* 2008; **11**: 32-29.