



Practical management of common urological complaints in primary care

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How important is Urology in
real life?



Urology

- Oncology
 - Ca kidney, bladder, prostate, testis etc
- Voiding problems
 - LUTS, BPH, overactive bladder, neurogenic problems
- Urolithiasis
- Andrology
 - Erectile dysfunction, Premature ejaculation, Infertility
- Urinary tract infection
 - Upper tract and lower tract
- Transplant
- Others
 - Reflux, Duplex, hydrocele etc

The facts

- Men ~ ½ populations – BPH, CaP, ED, PE, CPPS
- Aging population
 - Men ~ 80 years old
 - Women > 80 years old
 - Urological problems increasing – BPH, CaP, CaB, OAB
- Quality of life – getting more and more important
 - Lower urinary tract symptoms
 - Erectile dysfunction
 - Premature ejaculation
 - Female sexual dysfunction

10 Most Common Cancers				
Male				
Rank	Site	New cases registered	Relative frequency	Crude incidence rate
1 ▶	Lung	2,733	23.4%	83.0
2 ▶	Liver	1,264	10.8%	38.4
3 ▶	Colon*	1,085	9.3%	32.9
4 ▶	Prostate	826	7.1%	25.1
5 ▶	Rectum / anus*	742	6.3%	22.5
6 ▶	Nasopharynx	676	5.8%	20.5
7 ▶	Stomach	635	5.4%	19.3
8 ▶	Bladder	457	3.9%	13.9
9 ▶	Oesophagus	357	3.1%	10.8
10 ▶	Non-Hodgkin's lymphoma	328	2.8%	10.0
	All sites	11,696		355.1

10 Major Causes of Cancer Deaths				
Male				
Rank	Site	Deaths registered	Relative frequency	Crude mortality rate
1 ▶	Lung	2,332	32.6%	70.8
2 ▶	Liver	1,075	15.0%	32.6
3 ▶	Colon*	581	8.1%	17.6
4 ▶	Stomach	416	5.8%	12.6
5 ▶	Rectum / anus*	307	4.3%	9.3
6 ▶	Nasopharynx	293	4.1%	8.9
7 ▶	Oesophagus	288	4.0%	8.7
8 ▶	Prostate	209	2.9%	6.3
9 ▶	Pancreas	198	2.8%	6.0
10 ▶	Non-Hodgkin's lymphoma	170	2.4%	5.2
	All sites	7,156		217.2

Topics

- LUTS Obstructive BPH
- LUTS Irritative Infection / OAB
- Haematuria Ca Bladder
- Elevated PSA / AbN DRE Ca Prostate
- Scrotal mass Ca Testis
- Loin pain / Hydronephrosis Stone
- Sexual dysfunction ED



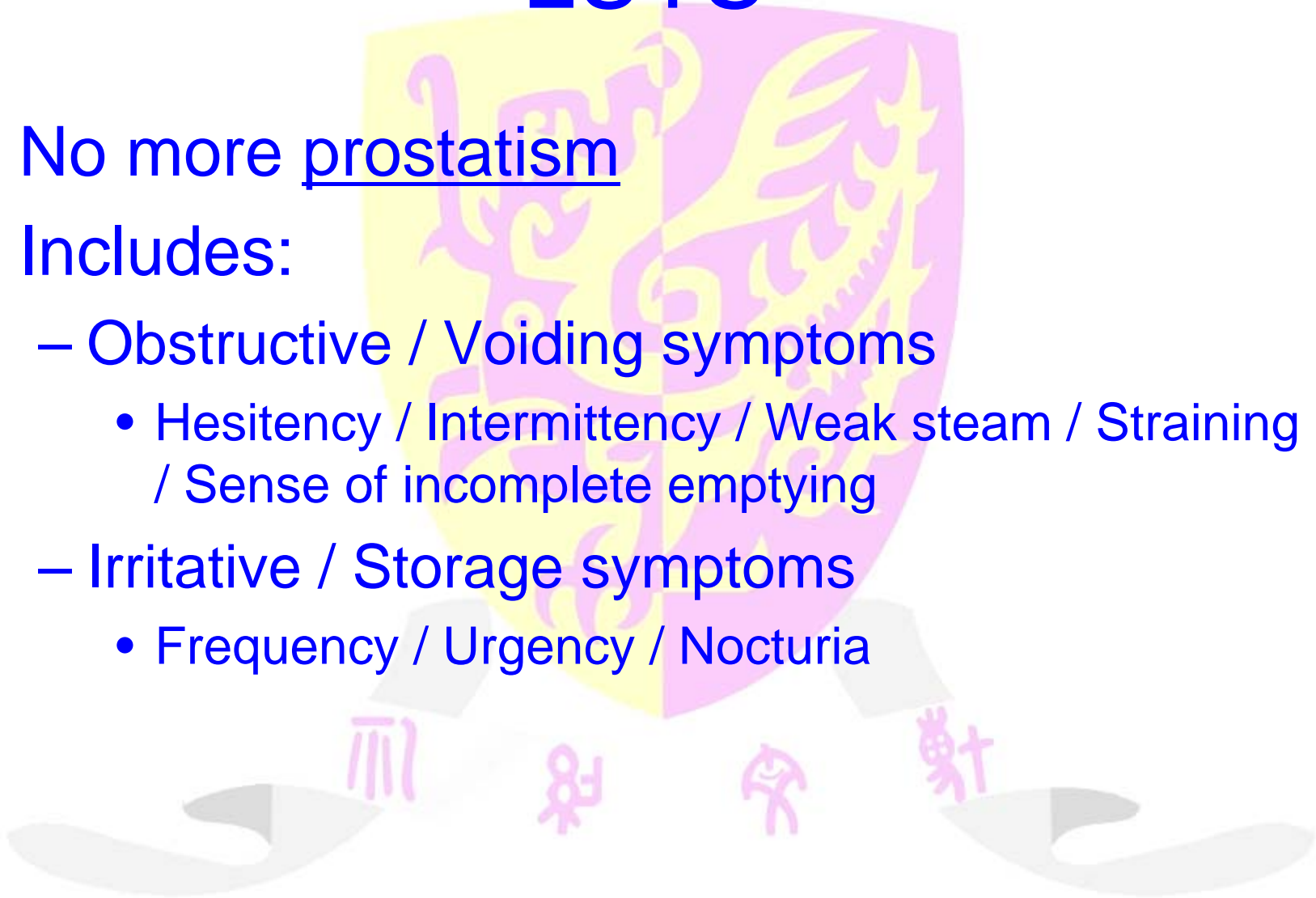
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LUTS

- No more prostatism
- Includes:
 - Obstructive / Voiding symptoms
 - Hesitency / Intermittency / Weak stream / Straining / Sense of incomplete emptying
 - Irritative / Storage symptoms
 - Frequency / Urgency / Nocturia



Causes

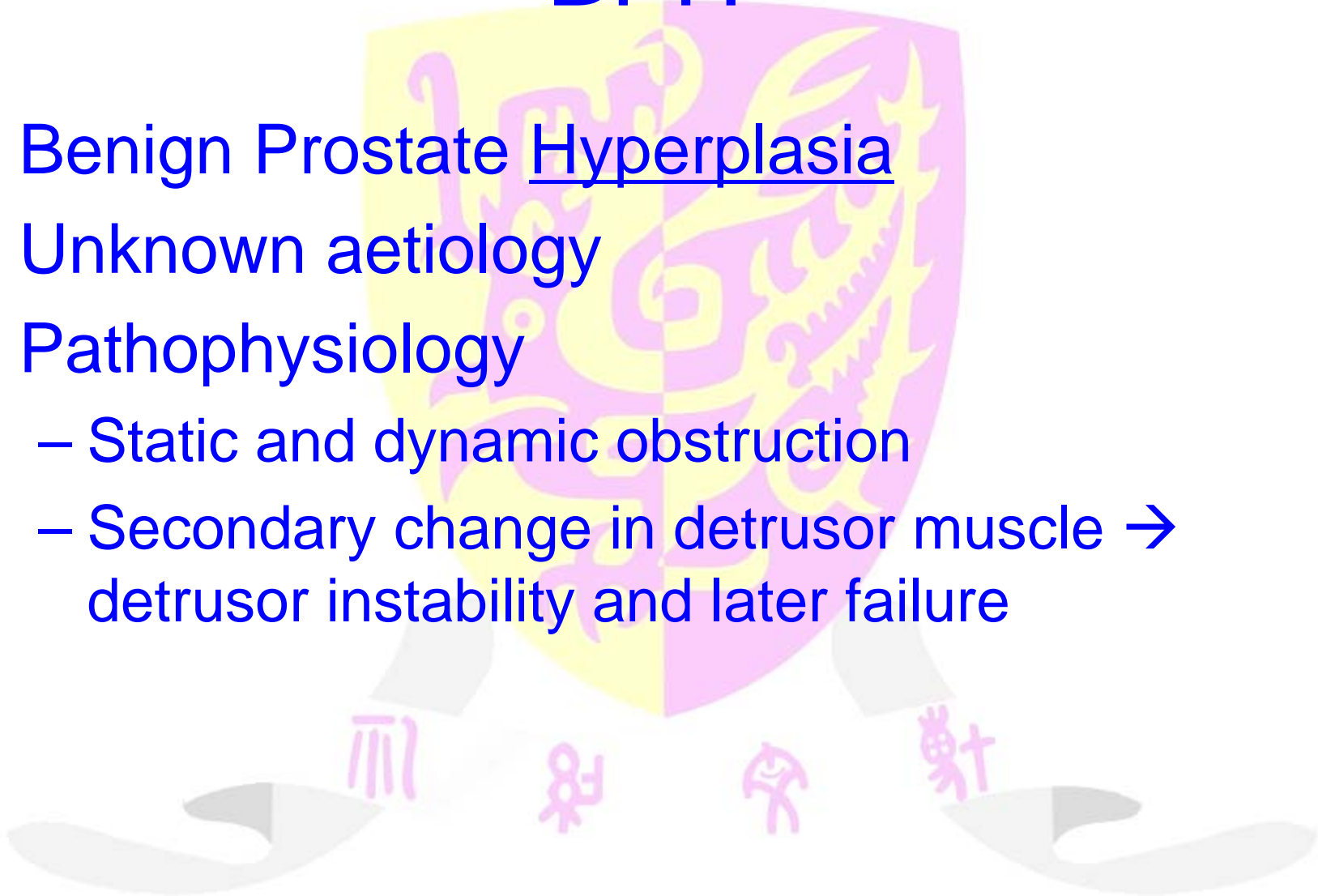


Causes


- Voiding symptoms
 - Outflow problem
 - Prostatic pathology
 - Urethral stricture...
 - Bladder problem
 - Hypocontractile bladder
 - Nerve
 - Detrusor muscle
- Storage symptoms
 - Local
 - Decrease capacity
 - Real
 - Functional
 - Local pathology – stone, UTI, tumour etc
 - Regional
 - Neurological problem
 - Detrusor instability
 - General
 - Increase fluid intake
 - Increase urine output

BPH

- Benign Prostate Hyperplasia
- Unknown aetiology
- Pathophysiology
 - Static and dynamic obstruction
 - Secondary change in detrusor muscle → detrusor instability and later failure

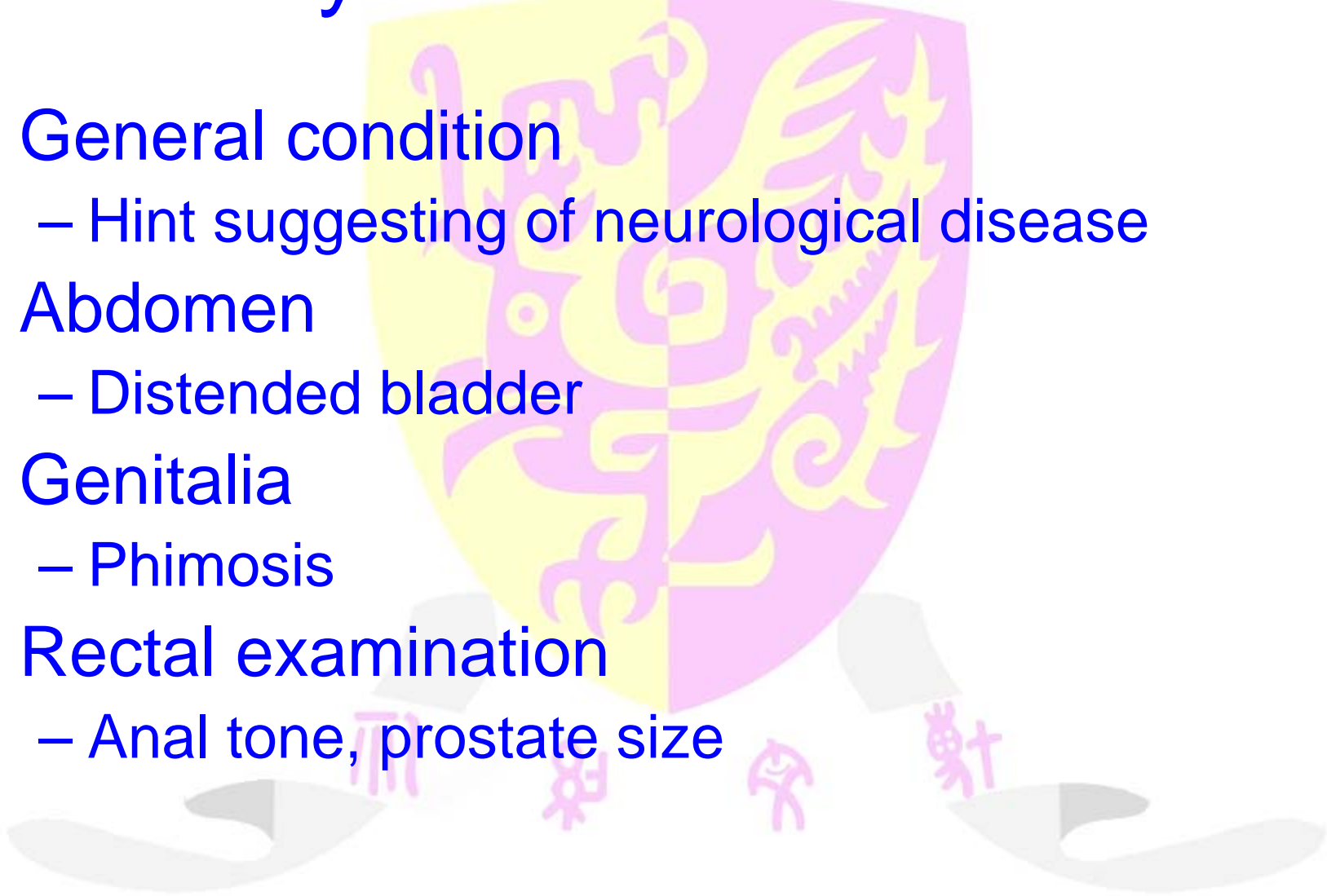


Typical vs atypical

- 
- Age: 60-80
 - Symptoms:
 - Both obstructive and irritative symptoms
 - for few months or years
 - Other symptoms
 - Not much
 - Past health:
 - Unremarkable
 - Usual 'elderly dx'
- Age: < 50 or >80
 - Symptoms:
 - Predominant irritative +/- haematuria
 - Pure nocturia
 - Acute onset
 - Other symptoms
 - Haematuria, loin pain
 - Past health:
 - Neurological dx
 - Long hx of DM
 - Post-longed hospitalization + catheterization
 - Trauma, STD

Physical examination

- General condition
 - Hint suggesting of neurological disease
- Abdomen
 - Distended bladder
- Genitalia
 - Phimosis
- Rectal examination
 - Anal tone, prostate size



Investigation

- Basic
 - IPSS
 - KUB, MSU
 - RFT, sugar, +/- PSA
 - +/- Uroflowmetry + bladder scan
- Other (at specialist clinic)
 - Cystoscopy
 - Urodynamic study

IPSS



International prostate symptom score (I-PSS)

Patient name:							
Date:							
1. Incomplete emptying Over the past month, how often have you had a sensation of not emptying your bladder completely after you finish urinating?	0	1	2	3	4	5	
2. Frequency Over the past month, how often have you had to urinate again less than two hours after you finished urinating?	0	1	2	3	4	5	
3. Intermittency Over the past month, how often have you found you stopped and started again several times when you urinated?	0	1	2	3	4	5	
4. Urgency Over the past month, how often have you found it difficult to postpone urination?	0	1	2	3	4	5	
5. Weak stream Over the past month, how often have you had a weak urinary stream?	0	1	2	3	4	5	
6. Straining Over the past month, how often have you had to push or strain to begin urination?	0	1	2	3	4	5	

7. Nocturia Over the past month, how many times did you need to get up to urinate more than once you went to bed at night until the time you got up in the morning?	0	1	2	3	4	5	
Total I-PSS Score:							

Quality of Life due to Urinary Symptoms							
If you were to spend the rest of your life with your urinary condition (not the way it is now, how would you feel about that?)	0	1	2	3	4	5	6

The International prostate symptom score (IPSS) is based on the answers to seven questions concerning urinary symptoms. Each question is assigned points from 0 to 5 indicating increasing severity of the particular symptom. The total score can therefore range from 0 to 35 (symptomatic to very symptomatic).

Although there are presently no standard recommendations on grading patients with mild, moderate or severe symptoms, patients can be tentatively classified as follows: 1 - 7 = mildly symptomatic; 8 - 19 = moderately symptomatic; 20 - 35 severely symptomatic.

The International Consensus Committee (ICC) recommends the use of only a single question to assess a patient's quality of life. The answer to this question ranges from "delighted" to "awful" or 0 to 6. Although this single question may or may not capture the global set of BPH symptoms on quality of life, it may serve as a reliable scoring point for a doctor-patient conversation.

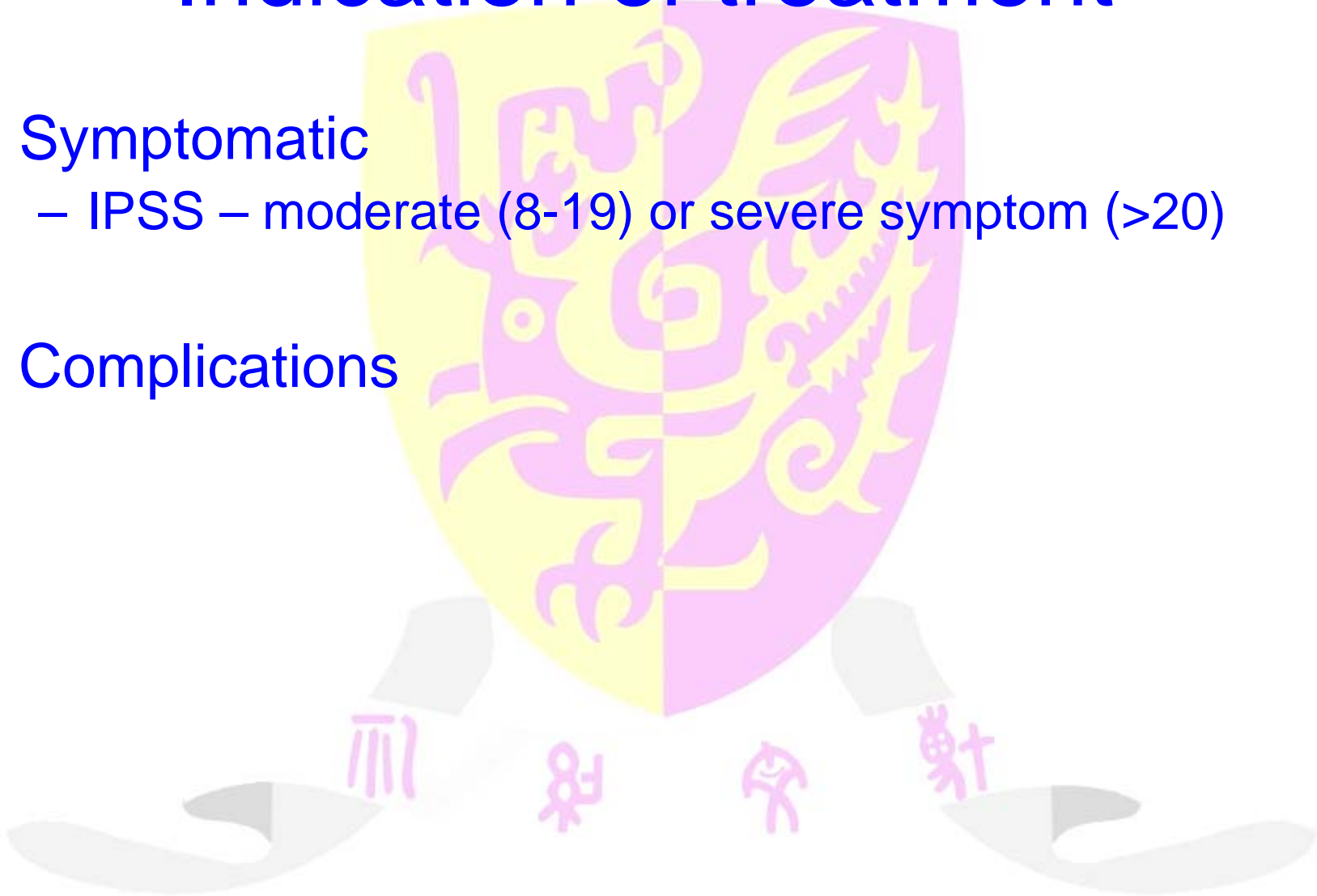


If nothing abnormal

“Treat accordingly”

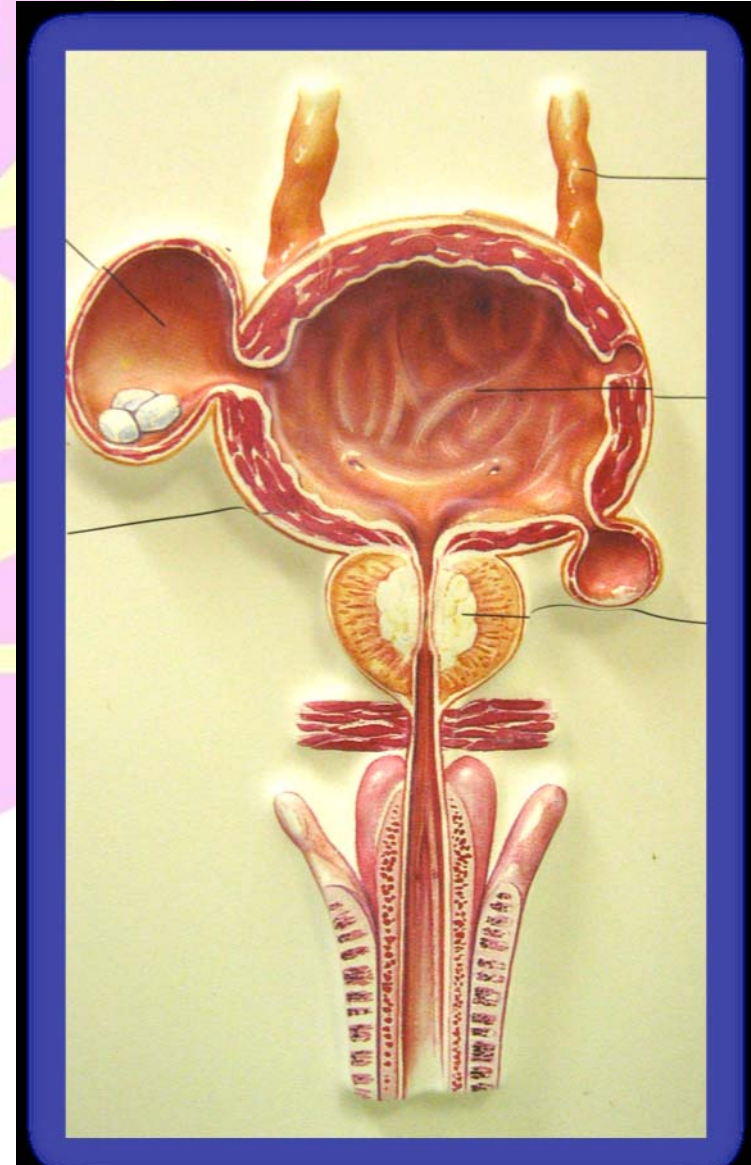
Indication of treatment

- Symptomatic
 - IPSS – moderate (8-19) or severe symptom (>20)
- Complications



Complications of BPH

- Obstructive uropathy to renal impairment
- Acute retention of urine
- Chronic retention of urine
- Urinary tract infection
- Bladder stone formation
- Urinary incontinence
- Haematuria

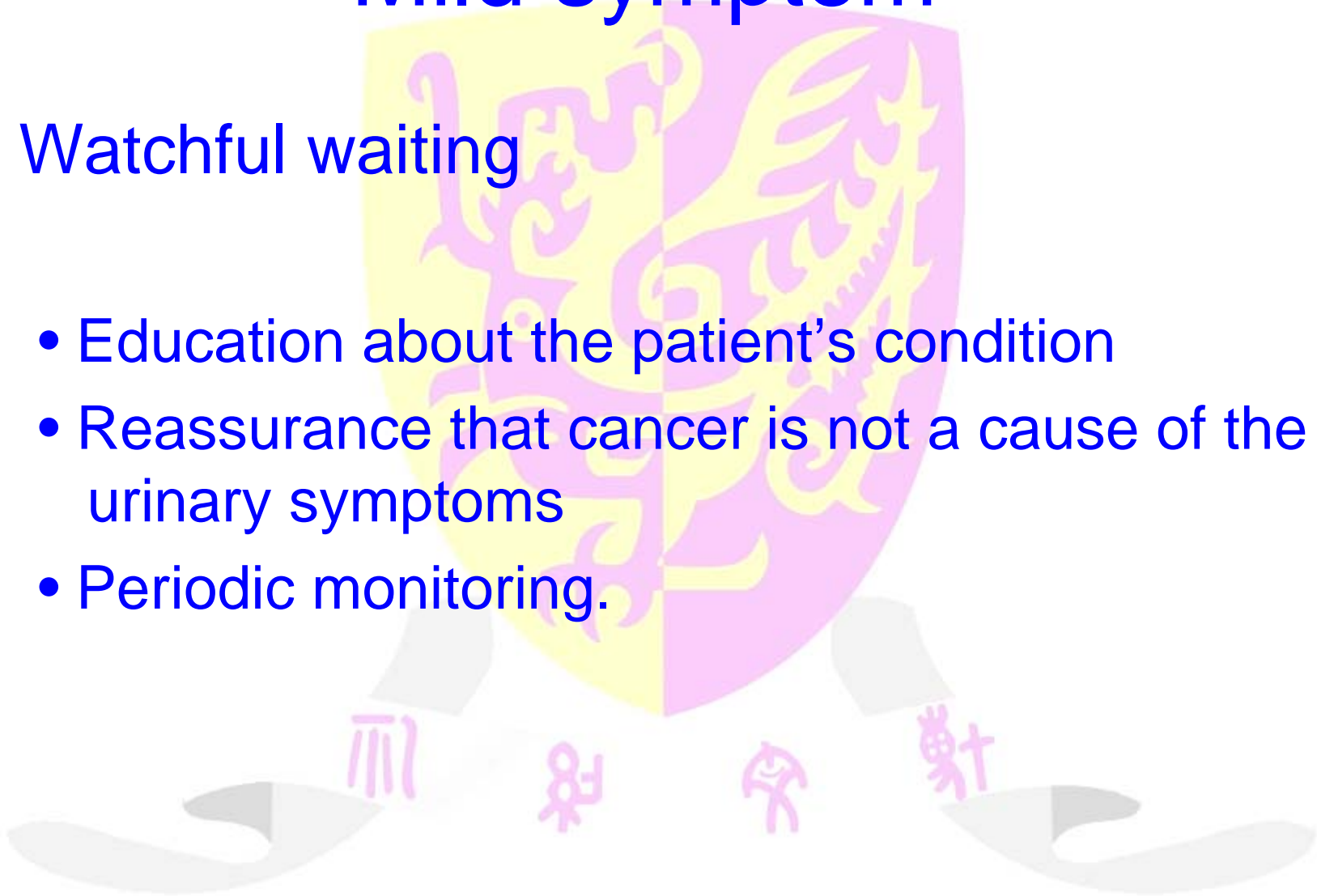


BPH

- Treatment
 - Conservatives
 - Medical
 - Alpha-blocker / 5-alpha reductase inhibitors
 - Phytotherapy / PDE5i
 - Minimally invasive therapy
 - Thermotherapy – ILC, RF, HIFU, TUMT
 - Tissue ablation – PVP, HoLRP, TVP
 - Surgical
 - TURP / Open prostatectomy
 - Others
 - Long term catheter
 - Stenting

Mild symptom

- Watchful waiting
 - Education about the patient's condition
 - Reassurance that cancer is not a cause of the urinary symptoms
 - Periodic monitoring.



Theory of using α -AR blocker

- Predominant component in BPH is stromal tissue with 39% of the hyperplasia tissue is smooth muscle

Shapiro et al J Urol 1992; 147: 1293

Shapiro et al The Prostate 1992; 20: 259

- Lepor and Shapiro reported that α 1-AR are abundant in the prostate and bladder neck and sparse in the bladder body

J Urol 1984; 132: 1226

- The area density of prostate smooth muscle measured from prostatic biopsy was shown to have direct relationship with the improvement of peak flow rate by terazosin

Shapiro et al The Prostate 1992; 21: 297

Current α 1-AR blocker

- Non-selective: Phenoxybenzamine
- Selective:
 - Prazosin (Minipress)
 - Terazosin (Hytrin)
 - Doxazosin (Cardura)
 - Alfuzosin (Xatral, Xatral SR, Xatral XL)
- Subtype selective (1a)
 - Tamsulosin (Harnal)
 - Silodosin (Rapaflo)

Dosing

- Lepor notes that efficacy is dose dependent for the titratable α 1-AR blocker doxazosin and terazosin—the higher the dose, the greater the observed improvement.

Lepor Campbell's Urology, 1998; 7th ed. ch47, pp. 1453

- Maximum tolerable and effective doses have not been defined for any alpha blocker, but reported clinical data support the efficacy and safety of titrating patients to
 - 8 mg of Doxazosin
 - 0.8 mg of Tamsulosin (from 0.4 mg),
 - 10 mg of Terazosin
 - 10 mg of Alfuzosin

Efficacy

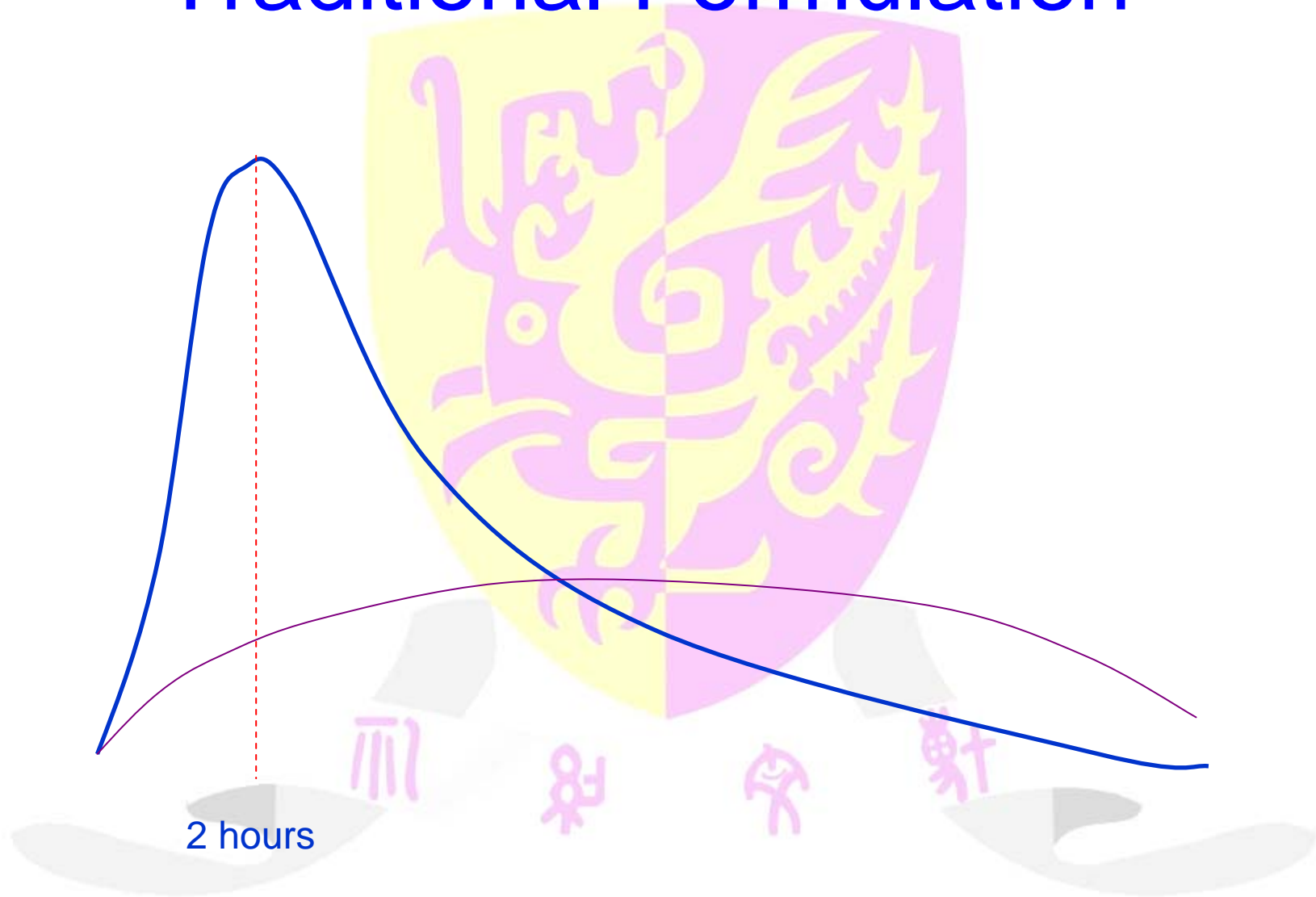
- Meta-analyzed data from the AUA Panel's evidence-based review suggest that alfuzosin, doxazosin, tamsulosin, and terazosin are similarly effective in partially relieving symptoms, producing on average a 4-to-6 point improvement in the AUA Symptom Index

AUA guidelines 2003

Side effects

- The primary adverse events reported with α 1-AR blocker are
 - orthostatic hypotension
 - dizziness
 - tiredness (asthenia)
 - nasal congestion
 - ejaculatory problems
- Discontinuation rate due to AE
 - For Alfuzosin & Tamsulosin = **4 ~ 10%** (similar to placebo)
 - For Doxazosin & Terazosin = **+ 4 ~ 10%**
- Ejaculatory problems (retrograde / retraded)
 - Tamsulosin = 4.5 ~10% (placebo 0 -1%)

Traditional Formulation



Drug	t_{max} (hours)	t_{1/2} (hours)	Recommended daily dose
Alfuzosin IR	1.5	4-6	3 x 2.5 mg
Alfuzosin SR	3	8	2 x 5 mg
Alfuzosin XL	9	11	1 x 10 mg
Doxazosin IR	2-3	20	1 x 2-8 mg
Doxazosin GITS	8-12	20	1 x 4-8 mg
Tamsulosin MR	6	10-13	1 x 0.4 mg
Tamsulosin OCAS	4-6	14-15	1 x 0.4 mg
Terazosin	1-2	8-14	1 x 5-10 mg

5-Alpha Reductase Inhibitors



5 α -reductase

- Dihydrotestosterone (DHT) is synthesized from testosterone via the enzyme 5- α -reductase
- In the majority of androgen target tissues either testosterone or DHT binds to a specific androgen receptor to form a complex that can regulate gene expression.
- DHT is essential for prostate development and growth, the development of the external genitalia and male patterns of facial and body hair growth or male-pattern baldness.

Mechanism

- 5α -RI is the sole hormonal therapy, to date, that demonstrates both efficacy and acceptable safety for treatment of BPH
- Decrease the size of prostate
- The onset of maximal clinical effect 3~12 weeks
- Effects especially superior in glands > 40ml

Boyle et al Urology 1996; 48: 398-405

Decrease in volume

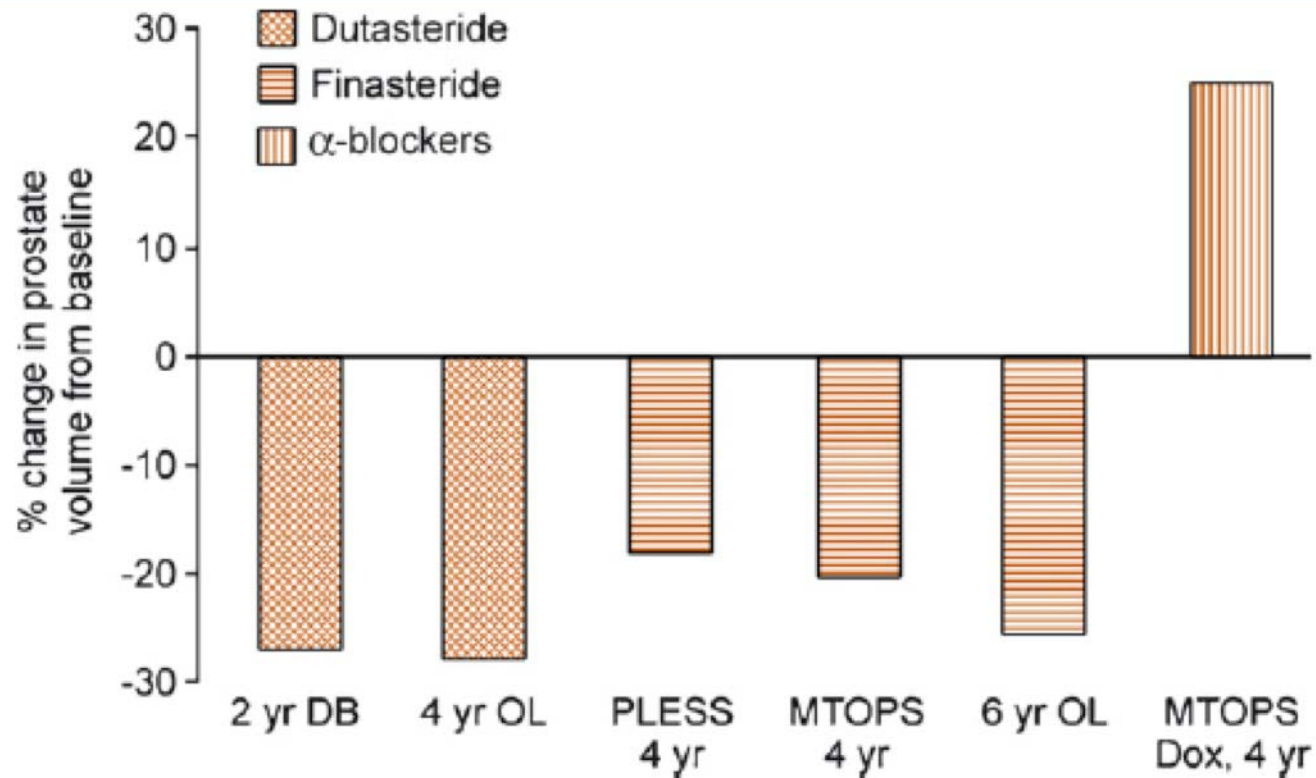


Fig. 5 – An indirect across-study comparison of long-term change in prostate volume following treatment with α -blockers, finasteride, and dutasteride [7,9–11].

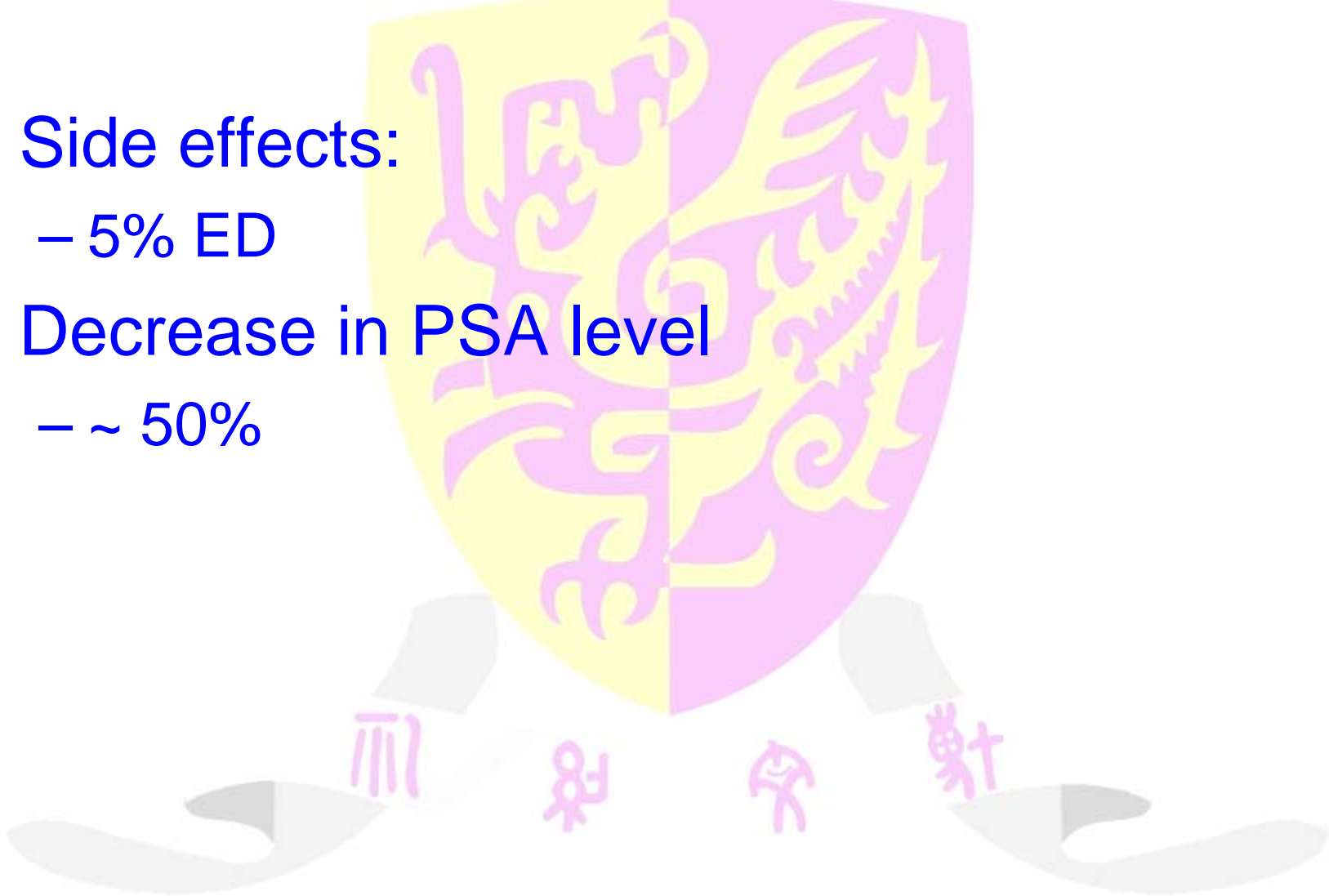
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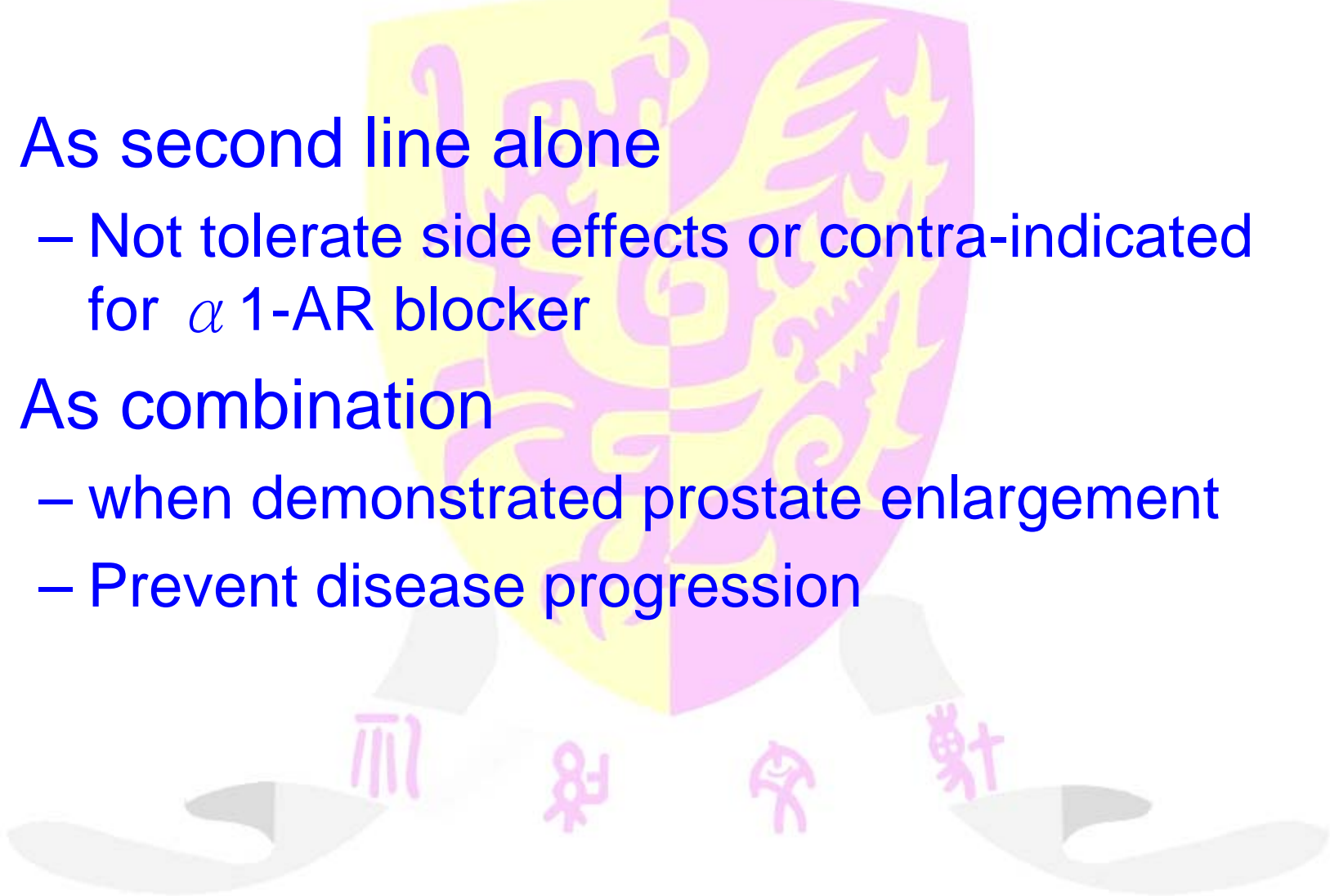
Precaution

- Side effects:
 - 5% ED
- Decrease in PSA level
 - ~ 50%



Main indications

- As second line alone
 - Not tolerate side effects or contra-indicated for α 1-AR blocker
- As combination
 - when demonstrated prostate enlargement
 - Prevent disease progression



When should we refer

- Atypical patients
- Failed medical treatment
 - Not response with alpha-blockers
- Complications



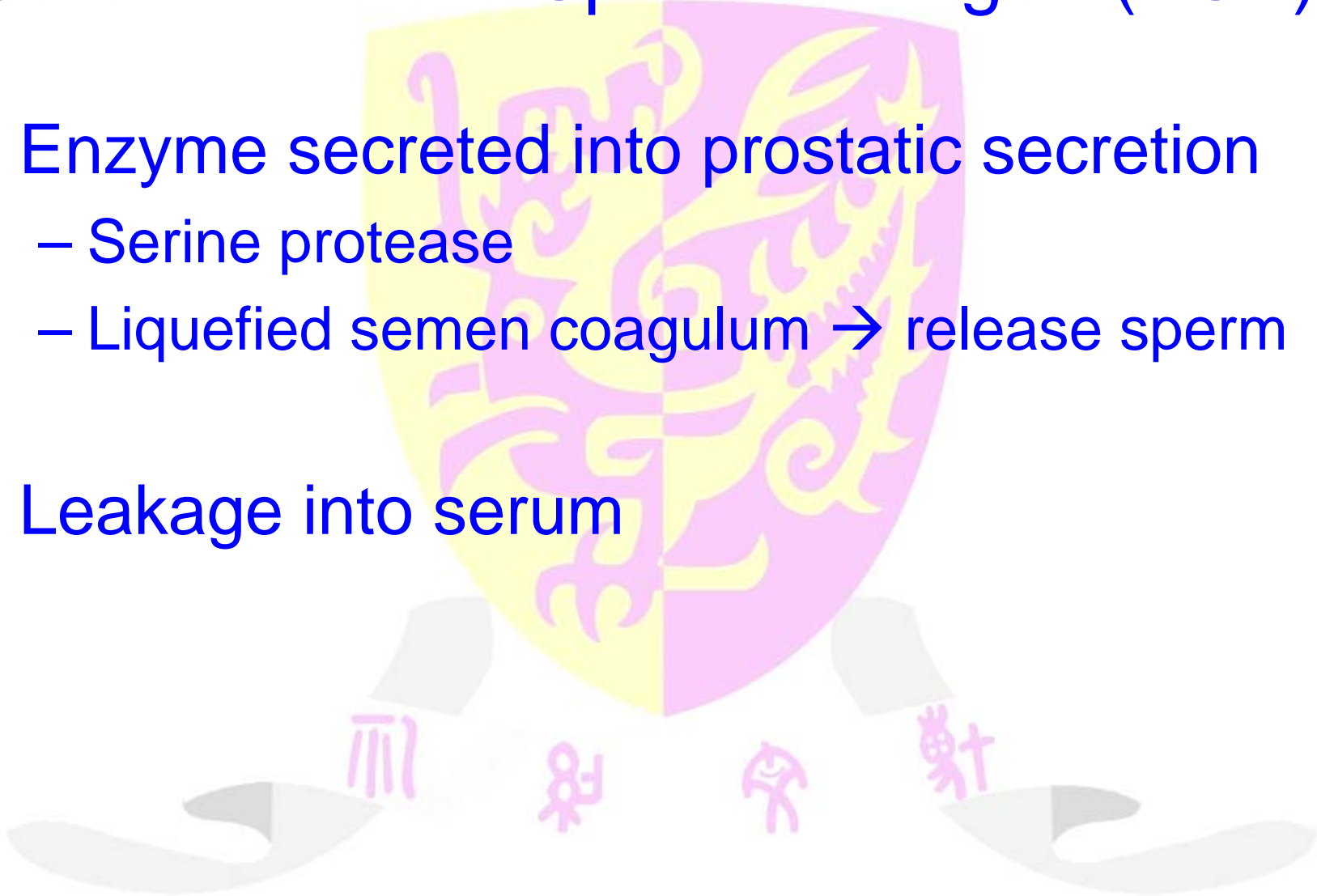


Ca Prostate and BPH

Same or Difference
Screen or not-screen

Serum Prostate Specific Antigen (PSA)

- Enzyme secreted into prostatic secretion
 - Serine protease
 - Liquefied semen coagulum → release sperm
- Leakage into serum



Serum Prostate Specific Antigen (PSA)

- Specific for prostate problems but not prostate cancer
- Upper normal limit 4 ng/l
 - Old study – 97.5% population < 4ng/L
 - 20% early prostate cancers below 4 ng/l
 - 20-30% BPH with PSA >4ng/l
- other PSA reference
 - Age specific range
 - PSA density
 - PSA velocity
 - Free and Total PSA
 - PSA doubling time

PSA increase in

CA prostate

Prostatitis (5 – 7X)

BPH

AROU (5 – 7X)

Manipulation (2 – 50X)

DRE

RT

Catheterisation

Vigorous bicycle

Treadmill stress test

Testosterone

PSA decrease in

Ejaculate within 1 – 2 days

Castration

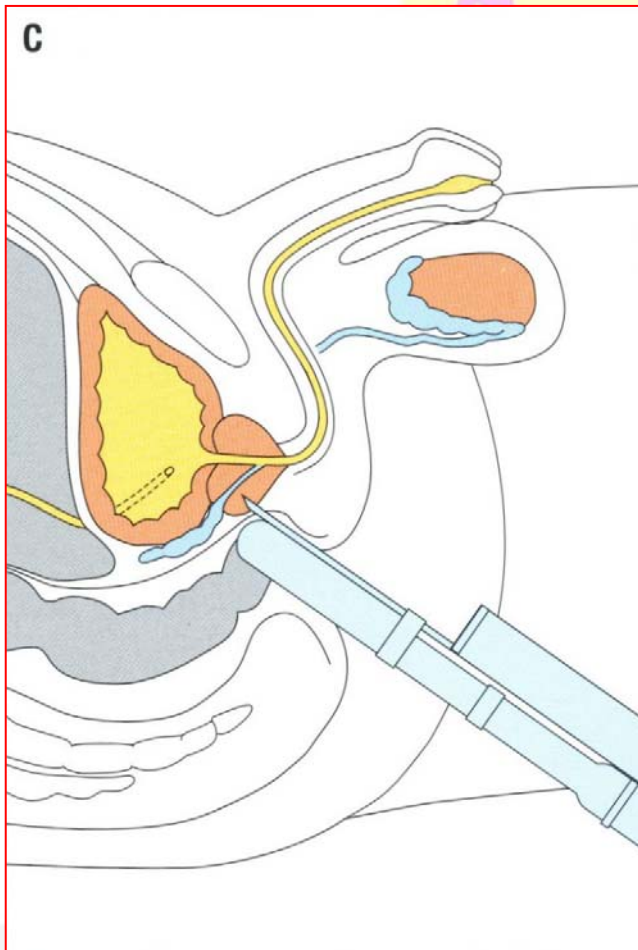
Use of antiandrogen

RT

Prostatectomy

Improper collection of specimen

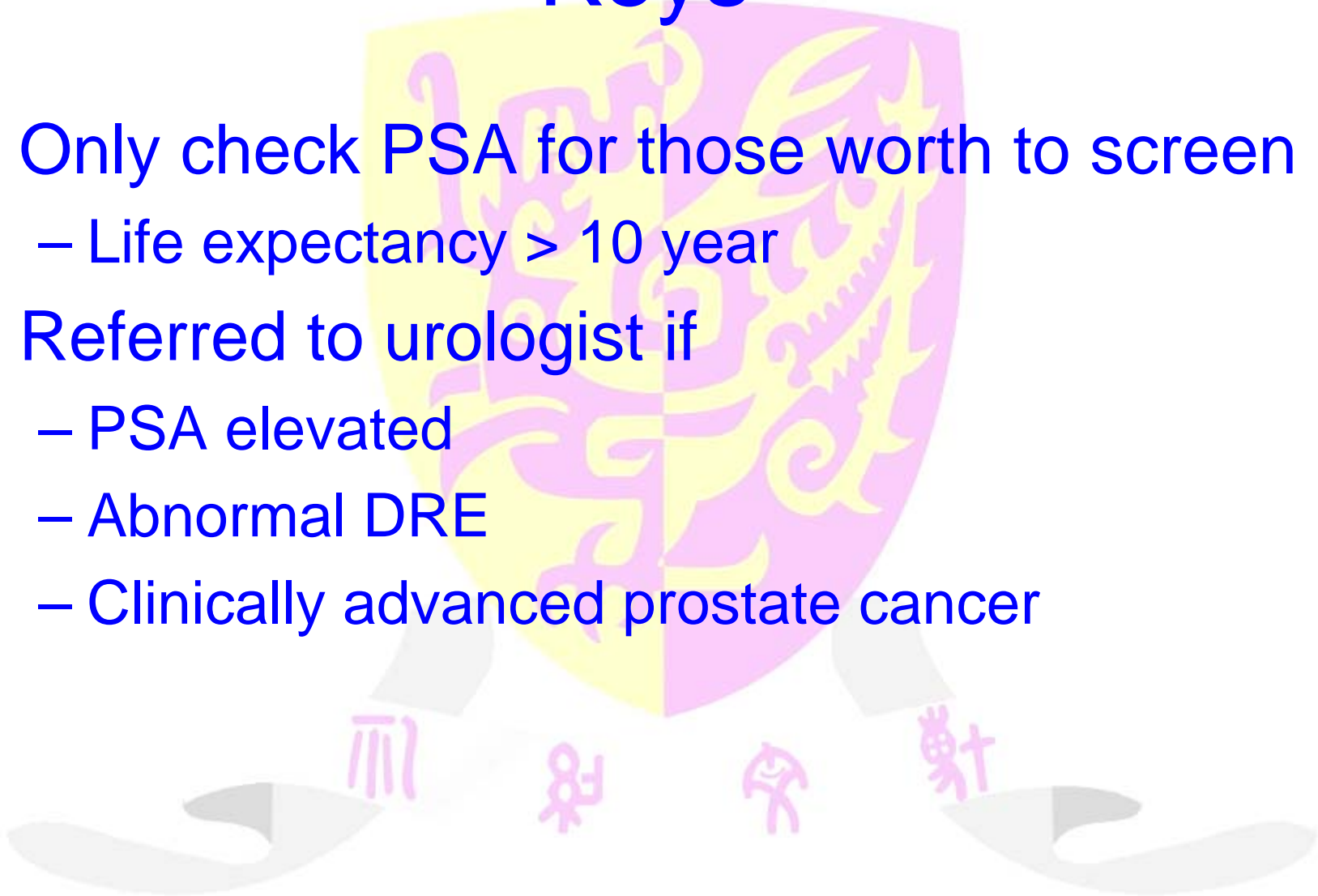
Diagnosis of Ca Prostate



- TRUS + Bx
- Indications
 - Abnormal DRE
 - Elevated PSA
- Complications:
 - Sepsis
 - Bleeding
 - AROU
- Preparation

Keys

- Only check PSA for those worth to screen
 - Life expectancy > 10 year
- Referred to urologist if
 - PSA elevated
 - Abnormal DRE
 - Clinically advanced prostate cancer

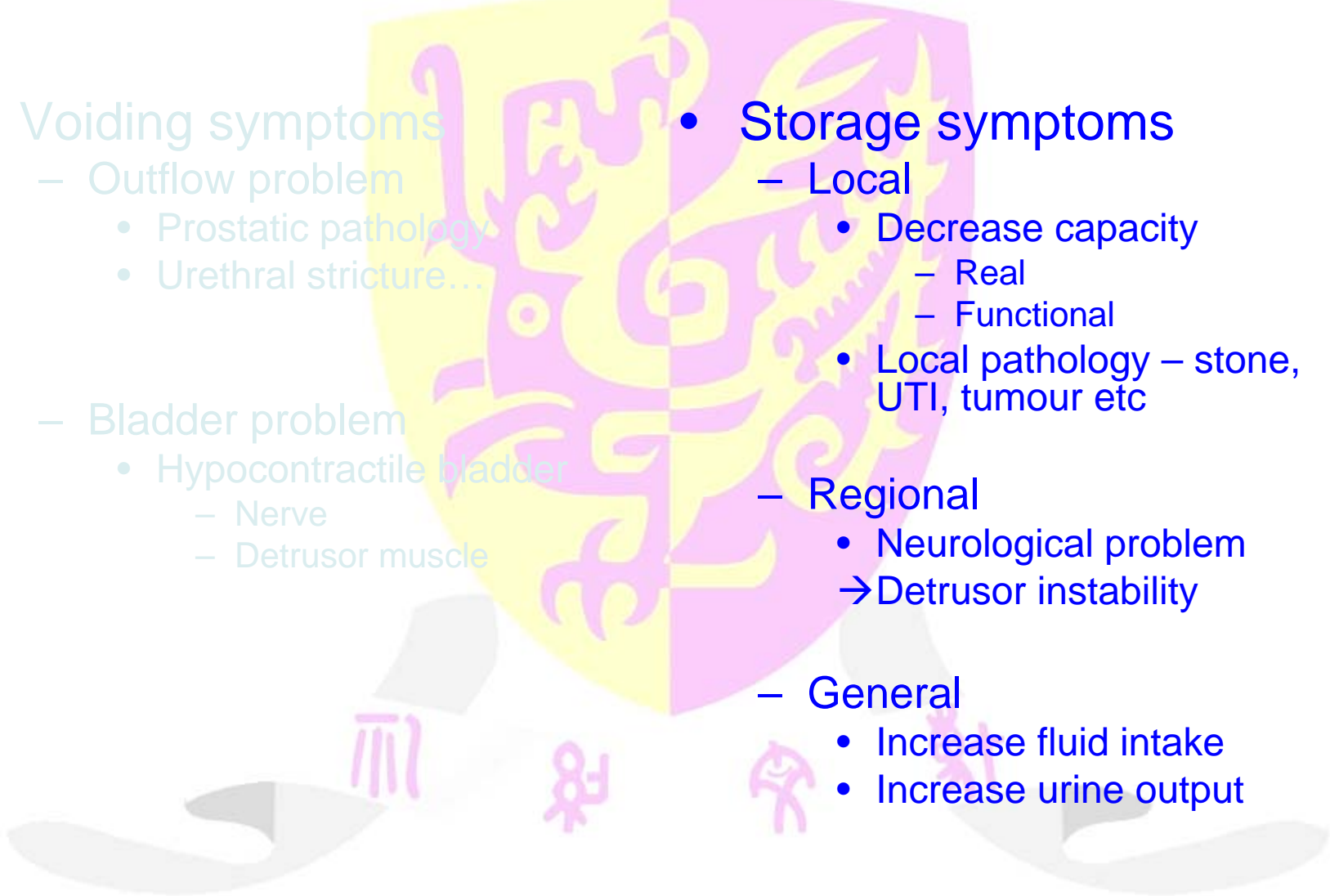


Irritative LUTS



Causes

- Voiding symptoms
 - Outflow problem
 - Prostatic pathology
 - Urethral stricture...
 - Bladder problem
 - Hypocontractile bladder
 - Nerve
 - Detrusor muscle
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 - General
 - Increase fluid intake
 - Increase urine output

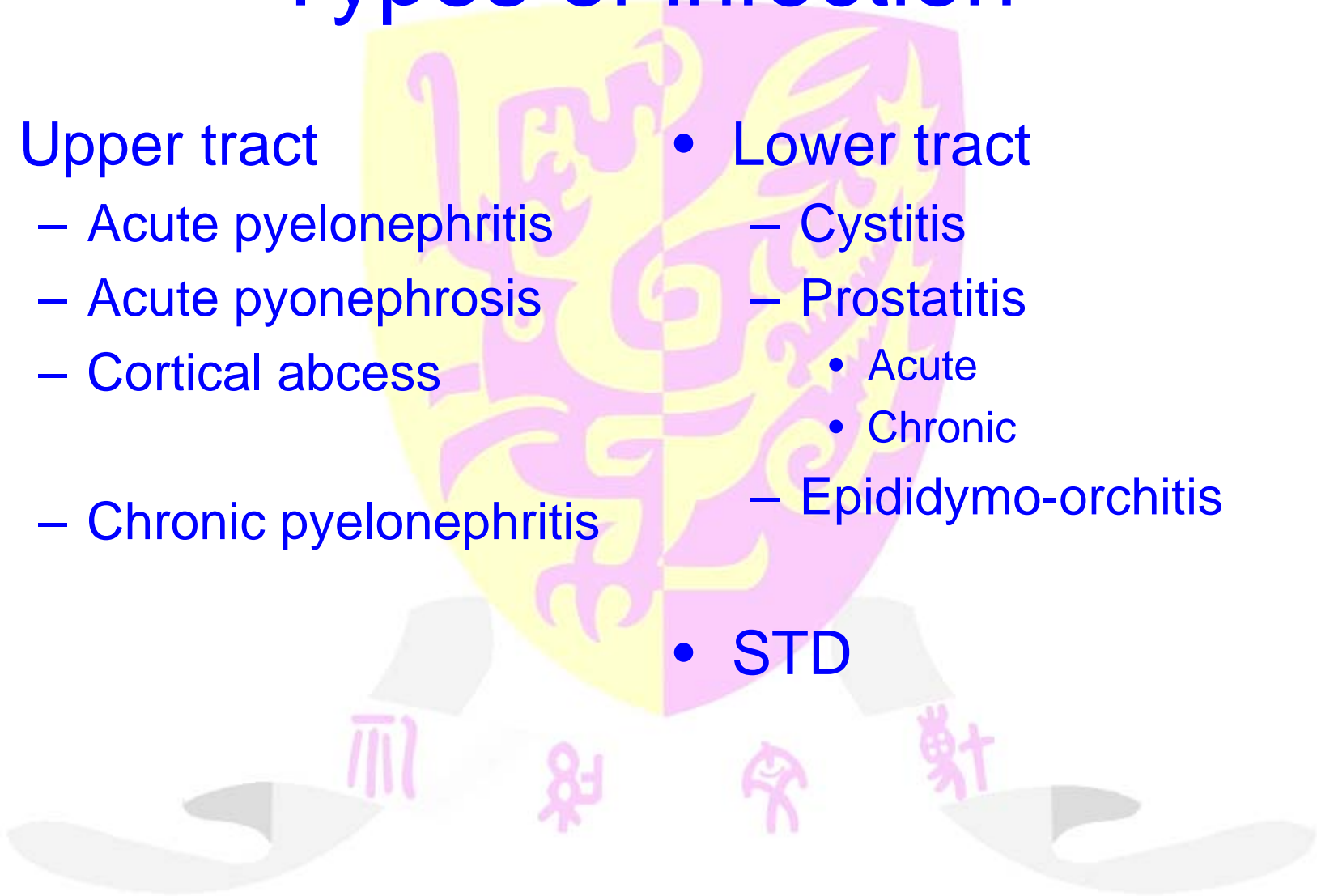


Infection



Types of infection

- Upper tract
 - Acute pyelonephritis
 - Acute pyonephrosis
 - Cortical abscess
 - Chronic pyelonephritis
- Lower tract
 - Cystitis
 - Prostatitis
 - Acute
 - Chronic
 - Epididymo-orchitis
- STD



Cystitis

- Simple
- Recurrent
 - Treatment failure
 - Relapsing vs re-infection
 - Other organisms
 - Documented?
 - Malignant cystitis...



Diagnosis of UTI

- Multistix
- Microscopy



Culture

- Not for every cases
 - Children, man, elderly, recurrent - must
- Methods of urine collection – most common - MSU
 - CFU/ml (MSU)
 - $> 10^5$
 - New approach
 - Symptomatic female $\geq 10^2$ E Coli CFU + ≥ 8 pus cell/mm³ or $\geq 10^5$ other organism
 - Symptomatic male $\geq 10^3$ pathogenic organism

Recurrent cystitis?

- Documented culture?
- No → need
- Yes → pattern



– Re-infection



– Relapsing

Re-infection

- Failure of defence mechanism
 - Hygiene
 - Post-coital etc
 - Voiding dysfunction
 - Large residual urine etc
 - Diabetes
- Management
 - Imaging or cystoscopy usually no use
 - Check Bladder scan / voiding
 - Check habit
 - Rule out DM

Re-infection

- Treatment
 - Correct predisposing cause
 - Voiding problems
 - DM
 - Hygiene



Medications

- Drug
 - Post-coital prophylactic
 - single dose of full strength
 - Long term suppressive antibiotics
 - Septrim, nitrofurantoin for 6-12 months
 - then see any breakthrough infection → may stop
 - Self-treatment by women who experience recurrent infection is also an effective strategy.
 - Useful for women with infrequent recurrences, or
 - Who are concerned they may develop infection while traveling or otherwise unable to access usual health care.

Approach to Irritative LUTS / Nocturia

- Daytime symptom?
 - No → pure nocturia – OSA, Dependent edema, disturbed ADH production
 - Yes → frequency
 - High urine output?
 - Yes → polyuria → increase intake or increase output
 - No → true frequency
 - » Detrusor hypersensitivity – secondary to nerve local irritative causes de novo
 - » Capacity problem – decrease true capacity functional capacity

Overactive bladder

- Symptom complex of urinary urgency (intense, sudden desire to void) +/- incontinence / urinary frequency / nocturia
- Present in the absence of any pathological or metabolic disorders could cause them
- Mx → exclude other causes
- Tx → beh training +/- anticholinergic agent

Anticholinergic agents



RCT on Anticholinergic in BOO

Saito et al. [26]	RCT: Tamsulosin vs. tamsulosin + propiverine	134	1	Improvements were shown in daytime frequency (29.6% in tamsulosin and 44.7% in combination therapy arms), nighttime frequency (22.5% in tamsulosin and 44.4% in combination therapy arms), and urgency symptoms (18.2% in tamsulosin and 22.2% in combination therapy arms).
Athanasopoulos et al. [9]	RCT: Tamsulosin vs. tamsulosin + tolterodine	50	3	Combination therapy increases Q_{max} (+1.2 ml/s); decreases in $PdetQ_{max}$ (-8 cm H ₂ O); improves quality of life score.
Lee et al. [11]	RCT: Doxazosin vs. doxazosin + propiverine	211	2	Combination therapy improves urinary frequency ($p = 0.004$), average micturition volume ($p = 0.004$), scores on items 2, 4, and 7 of IPSS ($p = 0.029$). Patients' satisfaction was higher in the combination therapy group (odds ratio 2.34).
Abrams et al. [13]	RCT: Tolterodine vs. placebo	222	3	Tolterodine does not reduce significantly Q_{max} (-0.7 ml/s) and $PdetQ_{max}$ (-7 cm H ₂ O); increases volume to first detrusor contraction (+59 ml, $p = 0.0026$), maximum cystometric capacity (+67 ml, $p = 0.0001$), and decreases BCI (-10, $p = 0.0045$) and voiding efficacy (-7%, $p = 0.018$).

Novara et al. Eur Urol Suppl 2006;5:418–29

Adverse events

Table 2 – Safety data from the analysed studies

Authors	PVR	AUR rate	Adverse events rate	Withdrawal rate
Randomised controlled trials published in peer-reviewed journals				
Saito et al. [26]	-4.0 ml	2.6%	NA	NA
Athanasopoulos et al. [9]	-4.2 ml	0	NR	12% in combination therapy arm, 4% in tamsulosin arm
Lee et al. [11]	+20.7 ml	0	42.7% in combination therapy arm, 18.9% in doxazosin arm ($p < 0.05$)	7.8% in combination therapy arm, 2.9% in doxazosin arm ($p = 0.22$)
Abrams et al. [13]	+27 ml	0	6% in treatment arm, 7% in placebo arm ($p = 0.32$)	11% in treatment arm, 17% in placebo arm

EAU guideline 2010

3.3.6 Recommendations

Recommendations	LE	GR
Muscarinic receptor antagonists might be considered in men with moderate to severe LUTS who have predominantly bladder storage symptoms	1b	B
Caution is advised in men with bladder outlet obstruction	4	C

- Advice – post-void residual < 150 cc

Young irritative LUTS



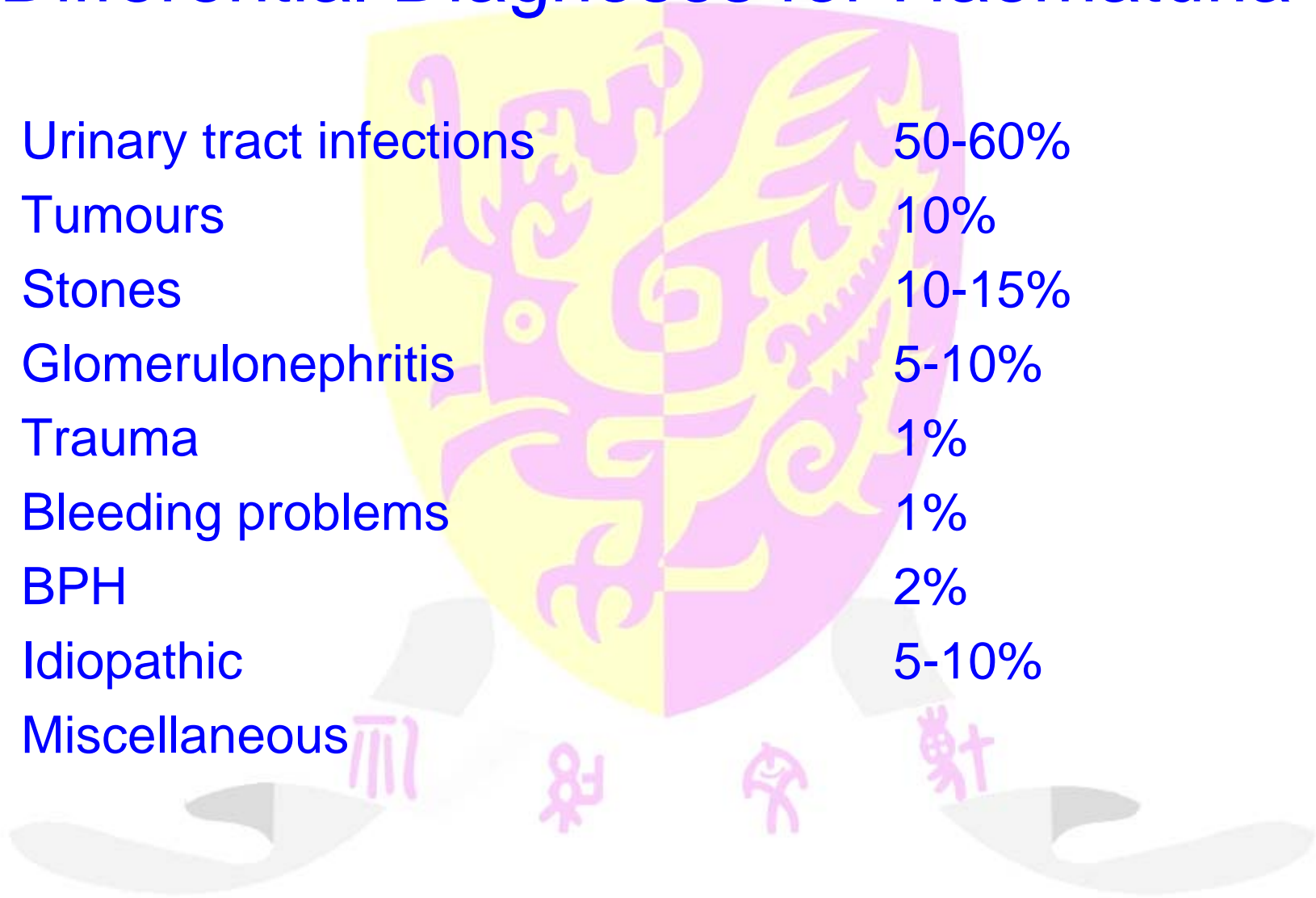
- Chronic smoker
- Irritative LUTS for ½ year
- No haematuria
- Seen by GP
 - Repeated culture –ve
 - KUB – no stone
- PMH: unremarkable
- What will you do?

Haematuria

- Characteristics
 - Gross / microscopic
 - Painful / Painless
 - Relationship with steams (only for men)
- Any associated symptoms
 - LUTS
 - UTI symptoms
 - Loin pain
 - Generalized bleeding tendency
 - Precipitating events – trauma, jogging, menstruation etc

Differential Diagnoses for Haematuria

- Urinary tract infections 50-60%
- Tumours 10%
- Stones 10-15%
- Glomerulonephritis 5-10%
- Trauma 1%
- Bleeding problems 1%
- BPH 2%
- Idiopathic 5-10%
- Miscellaneous



Investigations for Haematuria (1)

- Cancer until prove otherwise
- Haematuria work up – first line investigations
 - midstream urine for microscopy, culture & sensitivity test
 - abnormal RBC count confirmed bleeding
 - abnormal WBC count suggested infection
 - bacterial growth indicated urinary tract infection
 - urine cytology x 3
 - optimal sensitivity 70-80%
 - cystoscopy – lower urinary tract endoscopy
 - upper urinary tract imaging
 - intravenous urography or
 - Contrast CT urogrm
 - US (less optimal)
 - early morning urine for AFB x 3
 - not commonly done because of decrease occurrence
 - Blood
 - not cost-effective for cause, unless clinical or drug history suggestive
 - Even deranged clotting etc → still need work up

Scrotal mass

- Differential diagnosis
 - Inguinal
 - Spermatic cord
 - Varicocle / hydrocele of the cord / lipoma of the cord
 - Epididimus
 - Cysts / infection (acute or chronic)
 - Tunica vaginalis
 - Hydrocele / haematocele

Ca testis

- Most common – germ cell tumour
 - Seminoma
 - Non- seminoma
 - Both young age group – seldom > 40 years old
 - Occasionally old one → lymphoma
- Treatment
 - Early diagnosis – imaging US
 - Measurement of markers – AFP, β HCG

Acute Scrotum

- Sudden onset
- Most important –
 - Torsion – seldom > 30 year old
 - Infection (bacterial or viral) vs torsion
 - Other possibility
 - Trauma
 - Acute bleeding of tumour
 - Etc
 - Explode if in doubt
 - Doppler US is also helpful

Stone

- Stone
 - 10% population
 - 50% recurrence if don't do prevention
- Composition
 - Calcium related stone
 - Uric acid stone
 - Infective stone / Struvite / Staghorn stone
 - Cystine stone

Stone

- Acute
 - Loin pain
 - Diagnosis
 - Various imaging – pros and cons
 - NCHCT – gold standard
 - Treat sepsis → drainage
 - Control pain → drain if not control by simple mean
 - Haematuria
 - Urethral stone



Acute Loin Pain

- Traditionally, intravenous urogram (IVU) is the gold standard in the diagnosis of ureteric stone.
- However non-contrast helical computerized tomogram (NCHCT) has gained its popularity as the diagnostic tool for renal colic / ureteric stone

Acute Loin Pain

- Advantages
 - its high accuracy – >90%
 - Main problem – Lower ureteric stone vs pheboliths
 - wide availability
 - not requiring intravenous contrast
 - short performance time
 - Can provide information about possible differential diagnosis

Analgesics

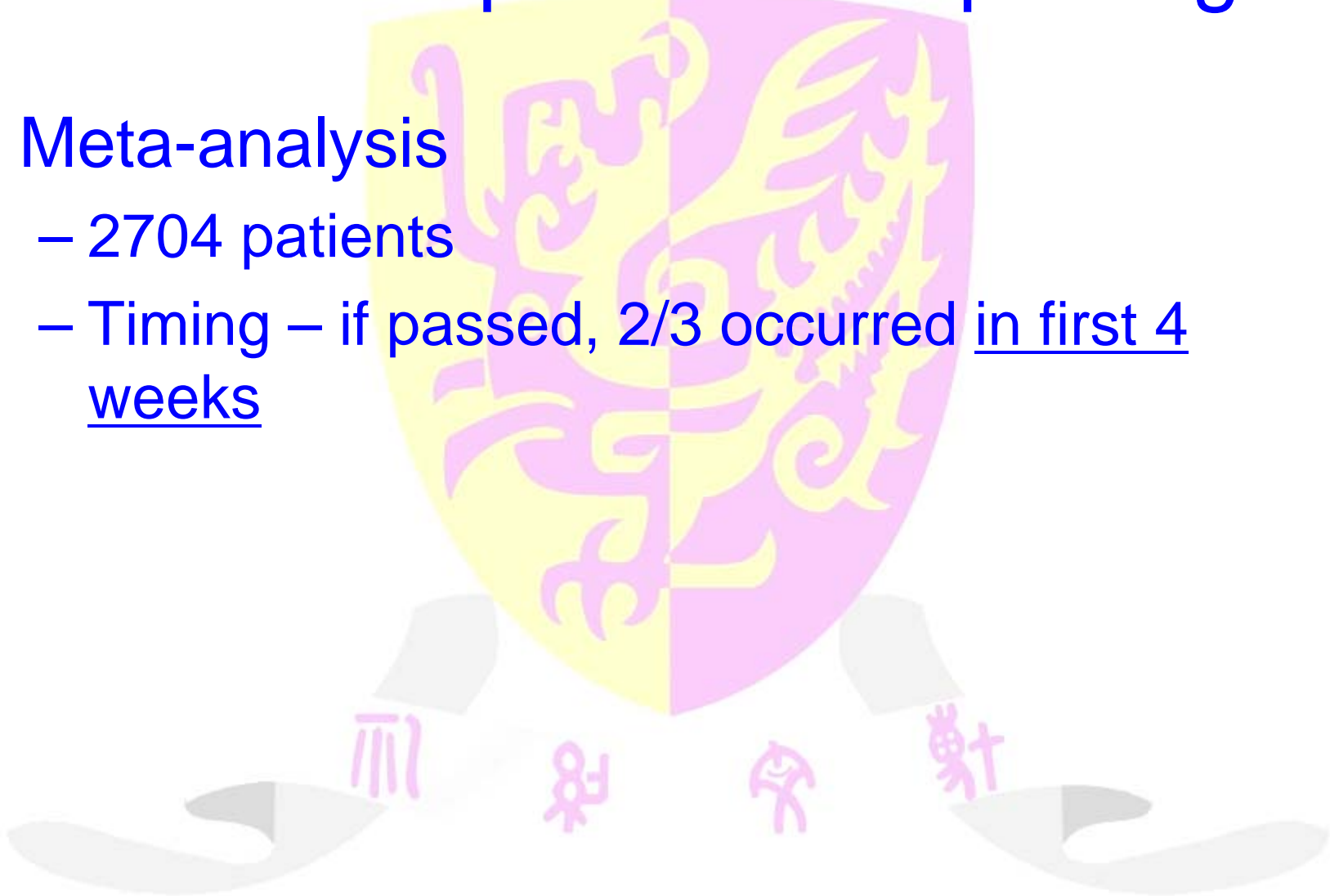
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 - 20 trials totalling 1613 participants were identified

Analgesics

- Metaanalysis of NSAID vs Opioids for urereric colic
 - 20 trials totalling 1613 participants were identified
 - Patients receiving NSAIDs
 - Greater reductions in pain scores and are less likely to require further analgesia in the short term than those receiving opioids.
 - Opioids, particularly pethidine, are associated with a higher rate of vomiting.

Chance of spontaneous passage

- Meta-analysis
 - 2704 patients
 - Timing – if passed, 2/3 occurred in first 4 weeks



Medical expulsive therapy



Distal ureteric stone

- Metaanalysis of 11 trials
 - Distal ureteric stone
 - With or without prior ESWL

Distal ureteric stone

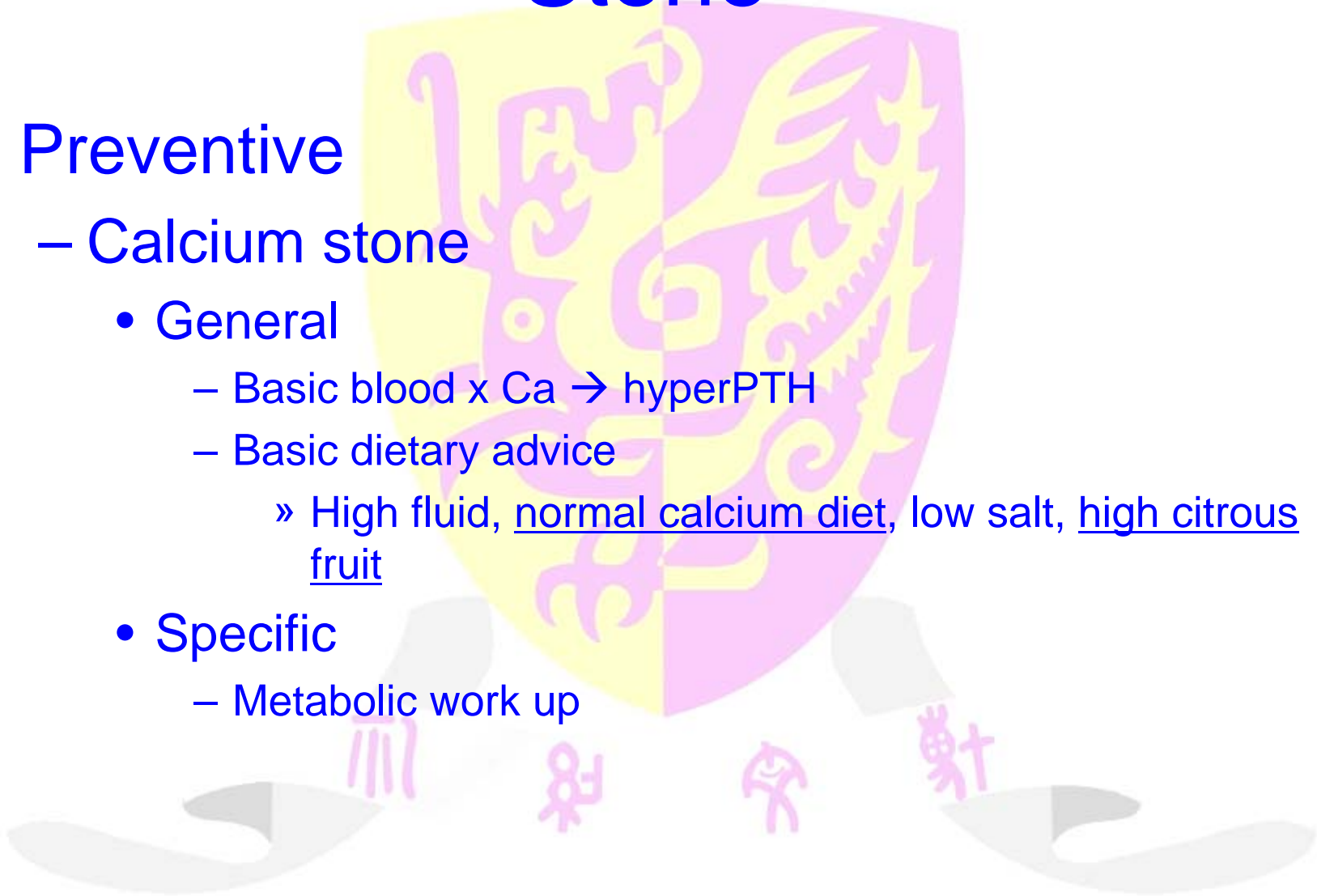
- α -Blocker therapy is associated with significantly increased rates of distal ureteral stone expulsion.
- Although the majority of clinical trials have evaluated tamsulosin without prior ESWL,
 - the persistence of the therapeutic effect across different studies suggests a clinically significant difference for α -blocker therapy regardless of α -blocker type or use of prior ESWL.

Stone

- Preventive
 - Uric acid stone
 - Low purine diet, high fluid intake, alkalization of urine
 - Infective stone
 - Treat infection and underlying cause
 - Cystine stone
 - High fluid intake
 - Chelating agents

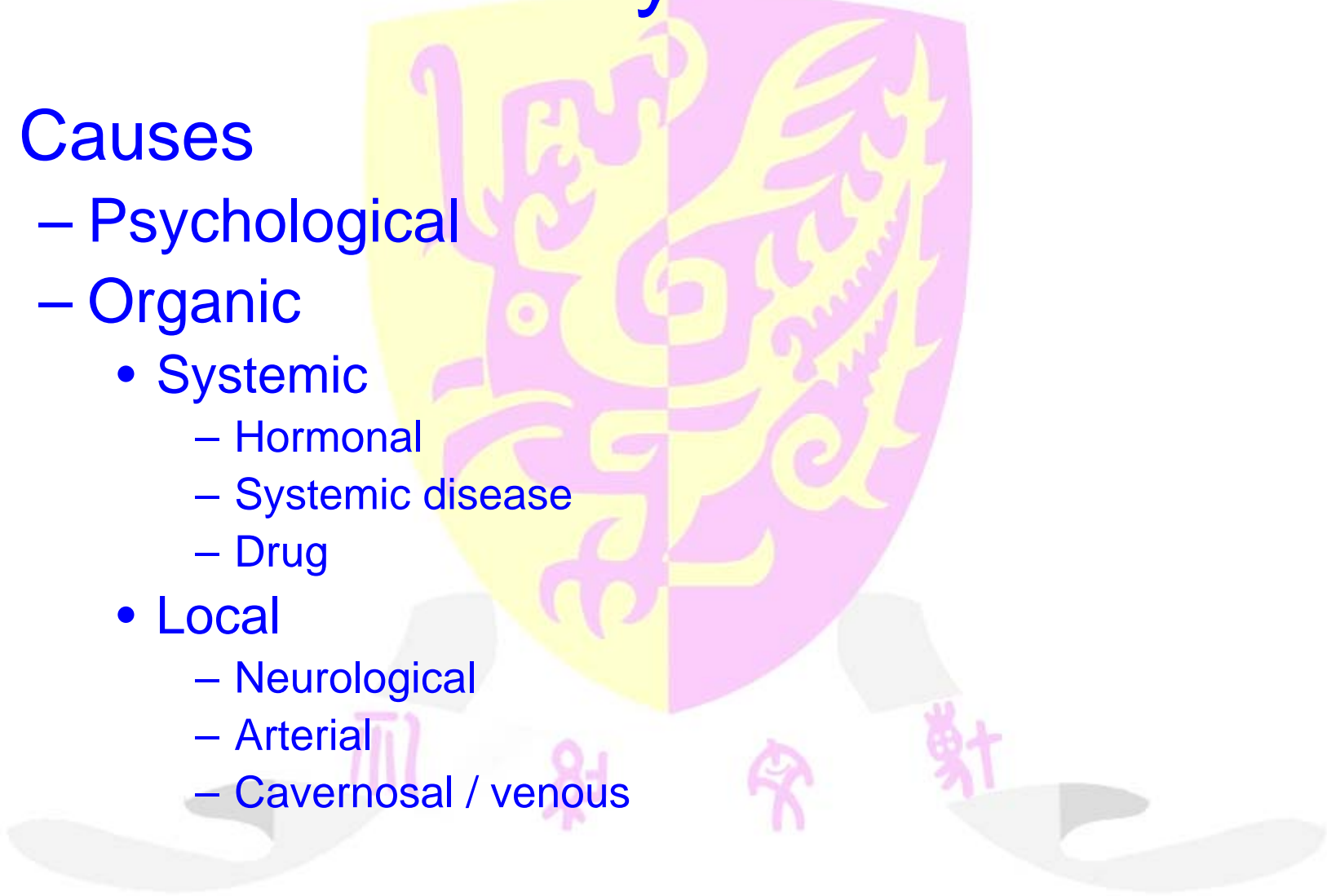
Stone

- Preventive
 - Calcium stone
 - General
 - Basic blood x Ca → hyperPTH
 - Basic dietary advice
 - » High fluid, normal calcium diet, low salt, high citrous fruit
 - Specific
 - Metabolic work up



Erectile dysfunction

- Causes
 - Psychological
 - Organic
 - Systemic
 - Hormonal
 - Systemic disease
 - Drug
 - Local
 - Neurological
 - Arterial
 - Cavernosal / venous



Drugs

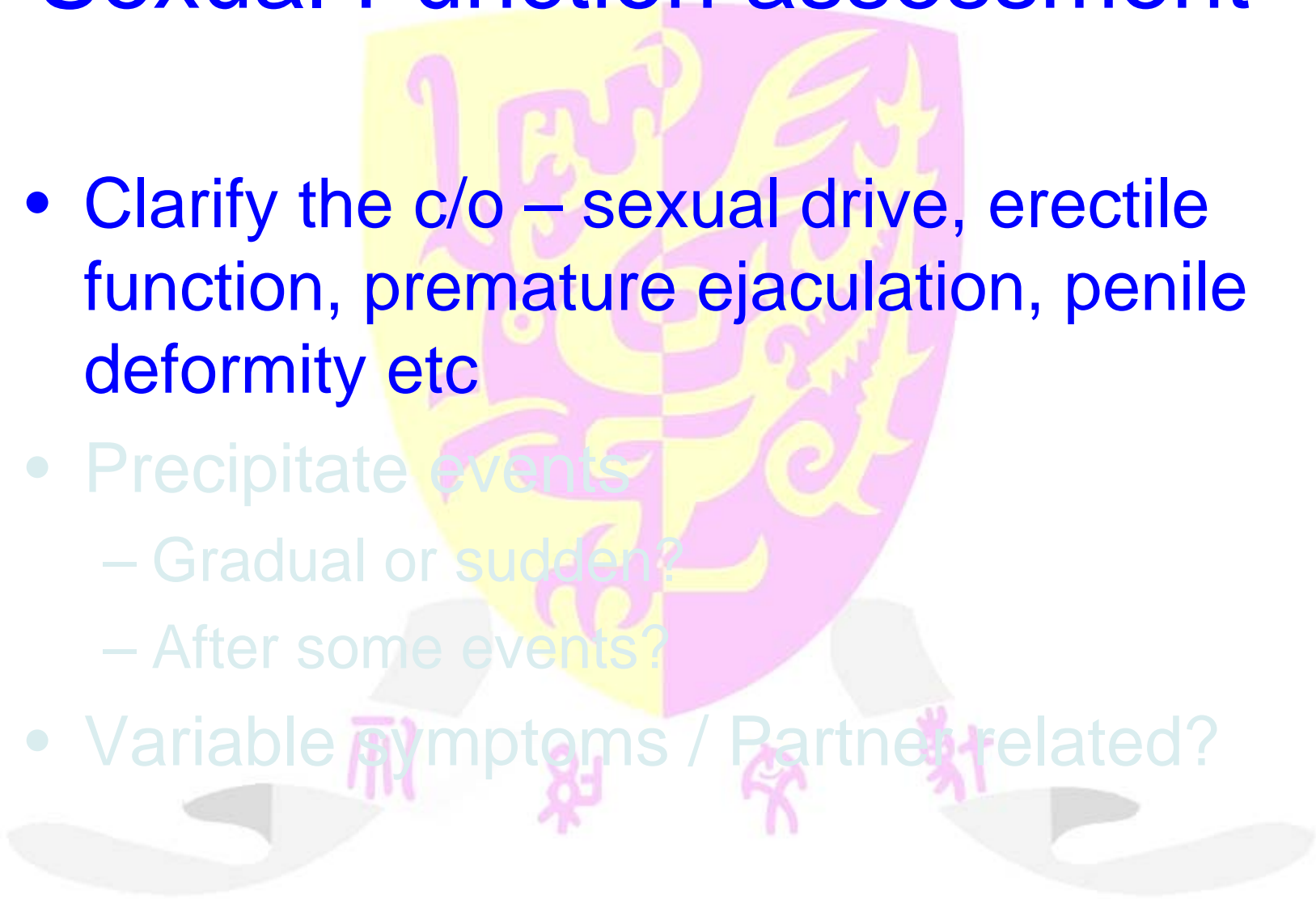
- Diuretics
 - Thiazides, spironolactone
- Antihypertensive drugs
 - Calcium channel blockers, beta-blockers, methyldopa, clonidine, reserpine, guanethidine
- Cardiac or cholesterol drugs
 - Digoxin, gemfibrozil, clofibrate
- Antidepressants
 - SSRI, TCA, Lithium, MAOI
- Alcohol, cocaine
- H₂-blockers
 - Ranitidine, cimetidine
- Hormones
 - LHRH analogues, 5- α -reductase inhibitors, anti-androgens
- Others – Methotrexate, interferon- γ , anticholinergic etc

Basic Evaluation

- Sexual Function assessment
 - Define the nature of the problem
 - Assess the severity of ED
- Medical assessment
 - Reversible risk factors
 - Unstable Cardiovascular condition
 - Pelvic perineal trauma?
- Psychosocial assessment

Sexual Function assessment

- Clarify the c/o – sexual drive, erectile function, premature ejaculation, penile deformity etc
- Precipitate events
 - Gradual or sudden?
 - After some events?
- Variable symptoms / Partner related?



Sexual Function assessment

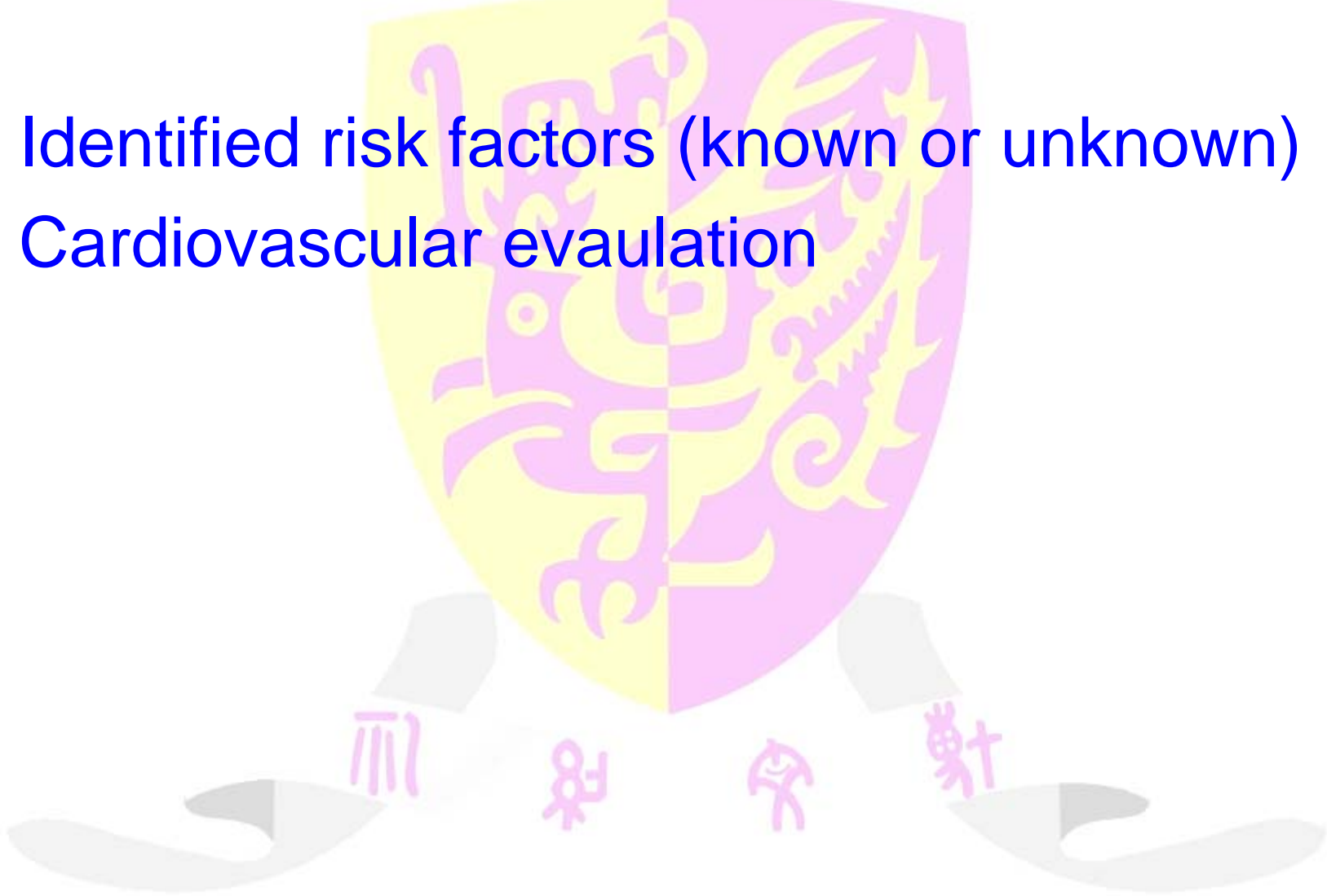
- Clarify the c/o – sexual drive, erectile function, premature ejaculation, penile deformity etc
- Precipitate events
 - Gradual or sudden?
 - After some events?
- Variable symptoms / Partner related?

Medical Assessment

- Identify causes (Potential reversible?)
 - Past medical disease / surgery
 - Pelvic trauma
 - Hormonal problems
 - Drug history...
- Identify Co-morbidities
 - LUTS
 - Cardiovascular risk factors
 - Psychological diseases – depression etc

Cardiovascular Status

- Identified risk factors (known or unknown)
- Cardiovascular evaluation

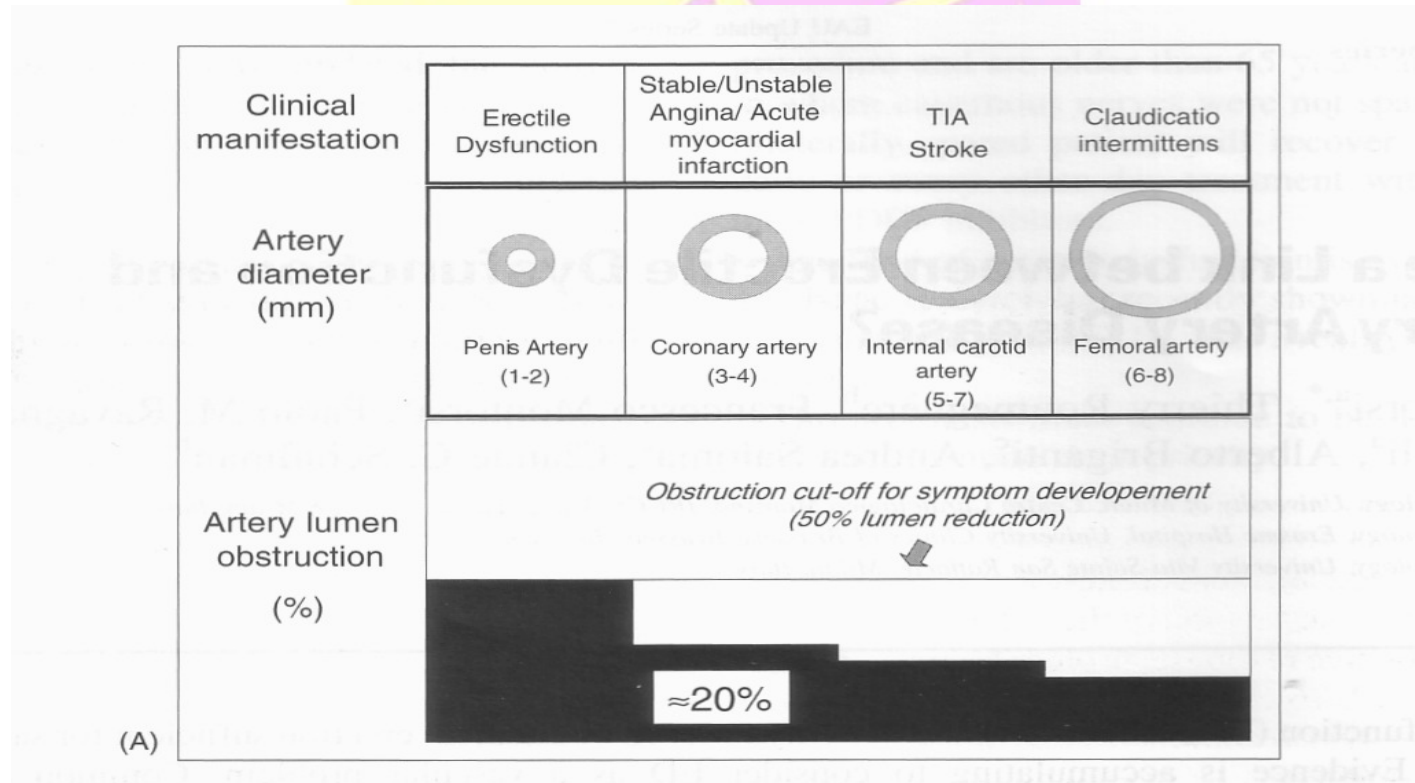


Cardiovascular Status

- Identified risk factors (known or unknown)
- Cardiovascular evaluation



ED – endothelial dysfunction



Men with moderate to severe ED → 65% increase risk for developing CAD in 10 years time

Cardiovascular risk

- ED is associated with the same risk factors for other vascular diseases:
 - Smoking
 - Obesity
 - Hypertension
 - sedentary lifestyle
 - Diabetes
 - Aging
 - Hyperlipidemia
- Penile a. smaller than coronary a. ED a warning sign for cardiac ischemia.

Results

- Total no. of patients: 634

Patient Characteristics	
Age (yrs) (mean/ range)	54.7 (19-81)
Duration of erectile dysfunction (months) (mean/ range)	44.9 (1-360)

Results

- Prevalence of **known** cardiovascular risk factors:

Risk factors	% of patients
Hypertension	36.6
Hyperlipidemia	1.9
Diabetes Mellites	30.7
Smokers	21.9

Results

- Newly diagnosed metabolic disease:

Metabolic disease	No. (%) of patients
Impaired fasting glycemia	97 (26.9)
Diabetes Mellites	5 (2.0%)
Dyslipidemia	127 (35.9%)

Promotion of Men Health



Erectile dysfunction

- Managements

- History

- Clarify the c/o
 - Precipitate events
 - Variable symptoms
 - Past medical disease / surgery / drug history

- PE

- General exam – suggest endocrine problems
 - Peripheral pulses

- Investigation:

- Basic blood test
 - Testosterone, LH, FSH, PRL, fasting sugar, Thyroxine

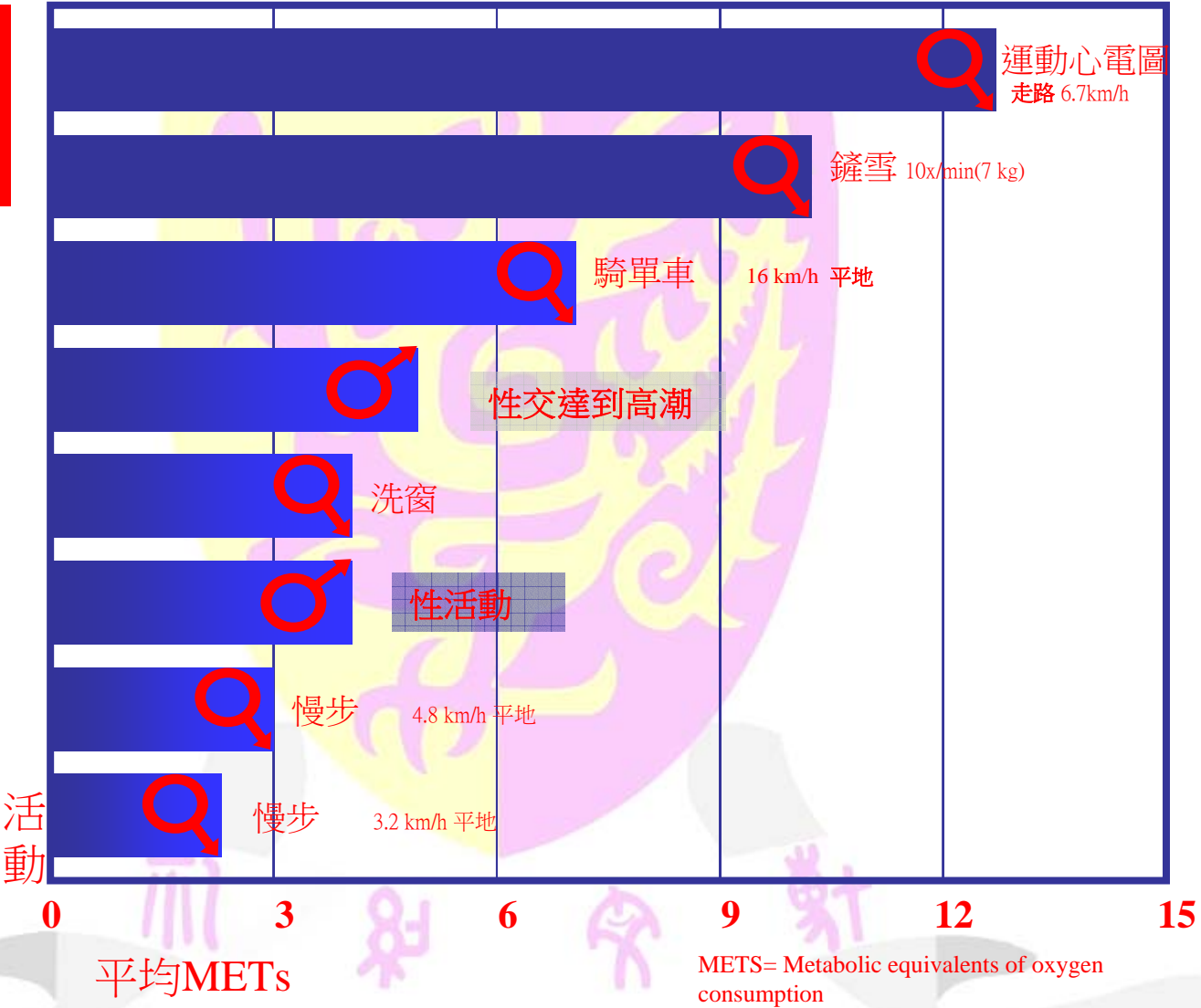
Cardiovascular Status

- Identified risk factors (known or unknown)
- **Cardiovascular evaluation**



Energy use in sex

Sex energy expenditure is equal to 15min walk or climbing 2 flights.



1 METS =在休息狀態下氧氣消耗量，
 例如：2 METs=兩倍在休息狀態下氧氣消耗量

Assessment of Cardiovascular risk

TABLE II Management Recommendations Based on Graded Cardiovascular (CV) Risk Assessment		
Grade of Risk	Categories of CVD	Management Recommendations
Low risk	<ul style="list-style-type: none"> ● Asymptomatic, <3 major risk factors for CAD ● Controlled hypertension ● Mild, stable angina ● Post-successful coronary revascularization ● Uncomplicated past MI (>6–8 wk) ● Mild valvular disease ● LVD/CHF (NYHA class I) 	<ul style="list-style-type: none"> ● Primary-care management ● Consider all first-line therapies ● Reassess at regular intervals (6–12 mo)
Intermediate risk	<ul style="list-style-type: none"> ● ≥3 major risk factors for CAD, excluding gender ● Moderate, stable angina ● Recent MI (>2, <6 wk) ● LVD/CHF (NYHA class II) ● Noncardiac sequelae of atherosclerotic disease (e.g., CVA, peripheral vascular disease) 	<ul style="list-style-type: none"> ● Specialized CV testing (e.g., ETT, Echo) ● Restratification into high risk or low risk based on the results of CV assessment
High risk	<ul style="list-style-type: none"> ● Unstable or refractory angina ● Uncontrolled hypertension ● LVD/CHF (NYHA class III/IV) ● Recent MI (<2 wk), CVA ● High-risk arrhythmias ● Hypertrophic obstructive and other cardiomyopathies ● Moderate/severe valvular disease 	<ul style="list-style-type: none"> ● Priority referral for specialized CV management ● Treatment for sexual dysfunction to be deferred until cardiac condition stabilized and dependent on specialist recommendations
<p>CAD = coronary artery disease; CHF = congestive heart failure; CVA = stroke; CVD = cardiovascular disease; Echo = echocardiogram; ETT = exercise tolerance test; LVD = left ventricular dysfunction; NYHA = New York Heart Association.</p>		

First Princeton consensus – Am J Cardiol 2000

Cardiac evaluation in ED

- Sexual intercourse 3-4METs, correspond to golfing
- Absolute risk that sex can trigger MI is 1-2 per million
- Low risk: safe for sex and ED treatment
- Medium risk: re-evaluate
- High risk: need stabilize before treatment for ED

Psychosocial Assessment

- Psychosocial distress
- Partner conflict
- Also
 - Patient expectation
 - Partner involvement



Physical examination

- General examination
 - Sign of hypogonadism
 - Small testes, gynecomastia, reduce body hair and beard
 - Neurological sign
 - Body build – BMI
- DRE – prostate – as screening and also co-existing LUTS
- Neurological examination – anal tone, bulbocavernous reflex (integrity of sacral nerve)
- Peripheral pulses

Lab tests

- Fasting blood sugar
- Lipid profile
- Testosterone, morning sample (low positive yield)
- LH, FSH, prolactin if testosterone low
- Complete blood picture and renal function test also recommended

Erectile dysfunction

- Management
 - Cause specific
 - Other
 - Medical
 - Systemic
 - » Central acting – uprima (apomorphine)
 - » Local acting – viagra, cialis, levitra
 - Topical (PDE2 analogue and other) (intracavernosal or transurethral or topical)
 - Surgical
 - Vascular surgery – arterial or venous
 - Penile prosthesis
 - Others
 - Vacuum pump

Lifestyle Counseling for ED

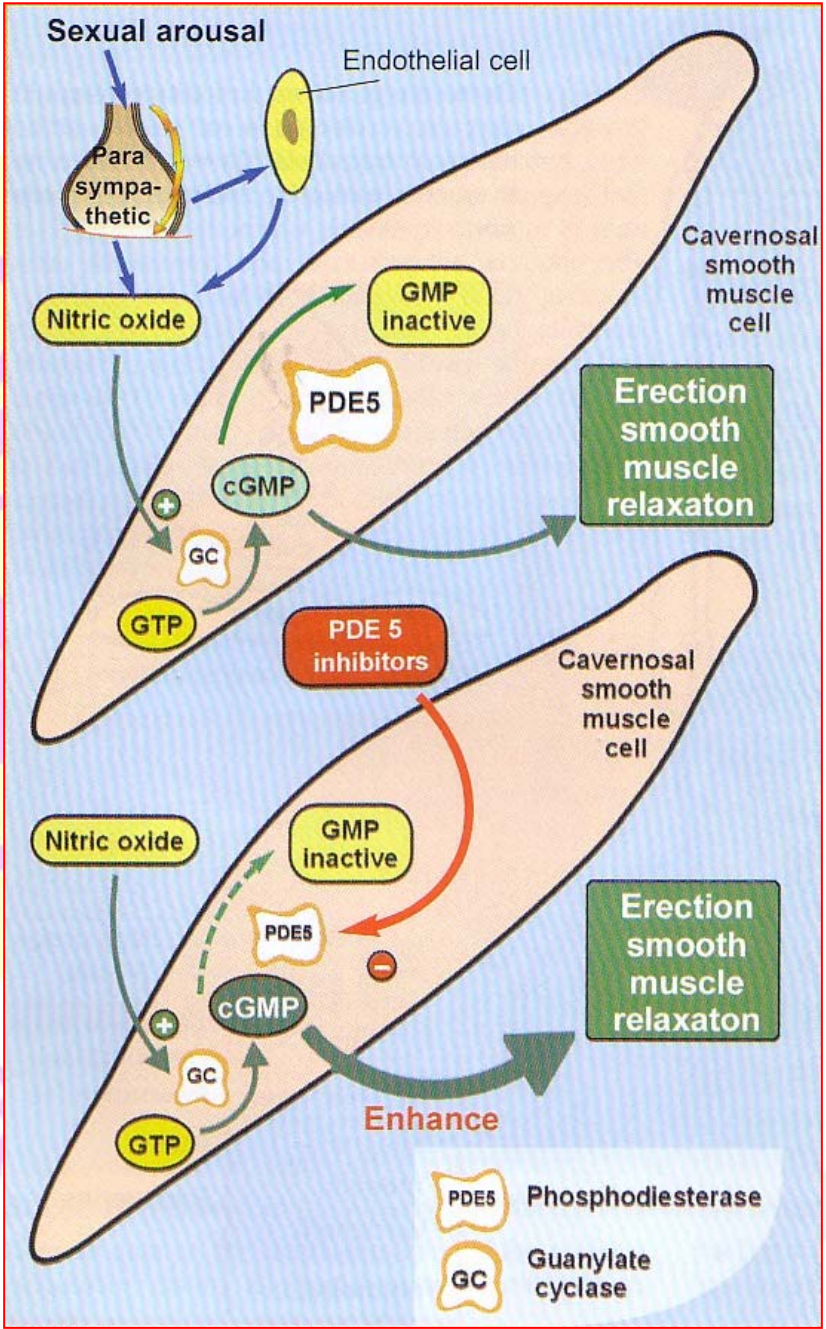
- Stop smoking, stop substance abuse
- Review drug with physician
- Reduce fat and cholesterol
- Exercise
- Improve compliance with cardiovascular and diabetes medication
- Stress reduction, treat depression

Lifestyle changes

- Increase exercise to 200kcal/day (walk 1 hour)
- Weight reduction
- Improve IIEF by 30% over 2 years

Esposito et al JAMA 2004

Drugs



Comparison of 3 PDE5 inhibitors

威而鋼 (Viagra)	犀利士 (Cialis)	立威大 (Levitra)
Sildenafil 25, 50, 100mg	Tadalafil 10, 20mg	Vardenafil 10, 20mg
1998	2003	2004
Tmax 1-2hr	Tmax 2hr	Tmax 0.25-3 hr
T _{1/2} 4-6hr	T _{1/2} 17.5hr	T _{1/2} 4.5hr
Take half hour before sex	Take half hour before sex	Take half hour before sex
Opportunity 5-6 hours	Opportunity 24 hours	Opportunity 5-6 hours
Not after meal	Independent of meal	Can take after meal
visual disturbance	Can have myalgia	QT int prolong

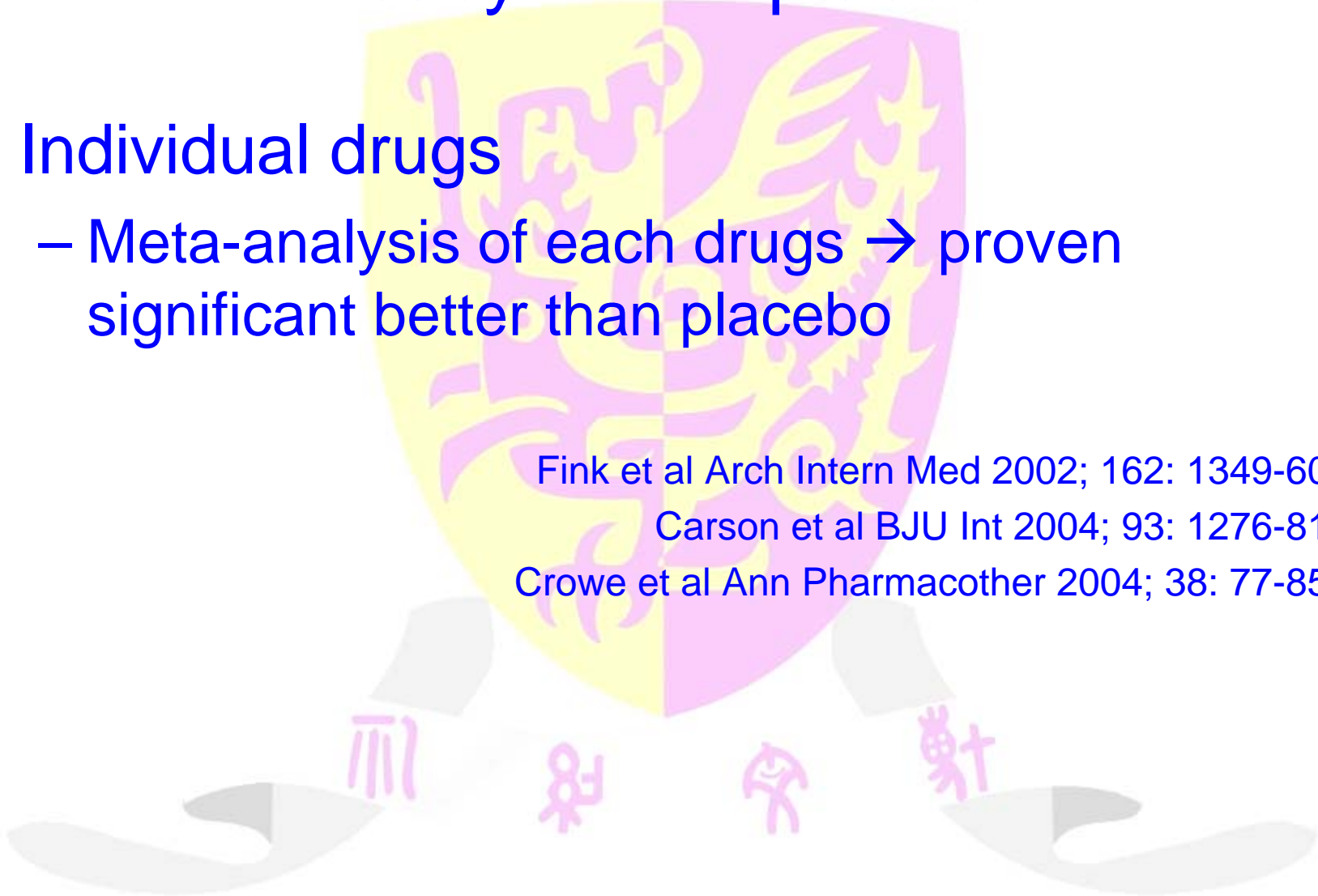
Efficacy – with placebo

- Individual drugs
 - Meta-analysis of each drugs → proven significant better than placebo

Fink et al Arch Intern Med 2002; 162: 1349-60

Carson et al BJU Int 2004; 93: 1276-81

Crowe et al Ann Pharmacother 2004; 38: 77-85

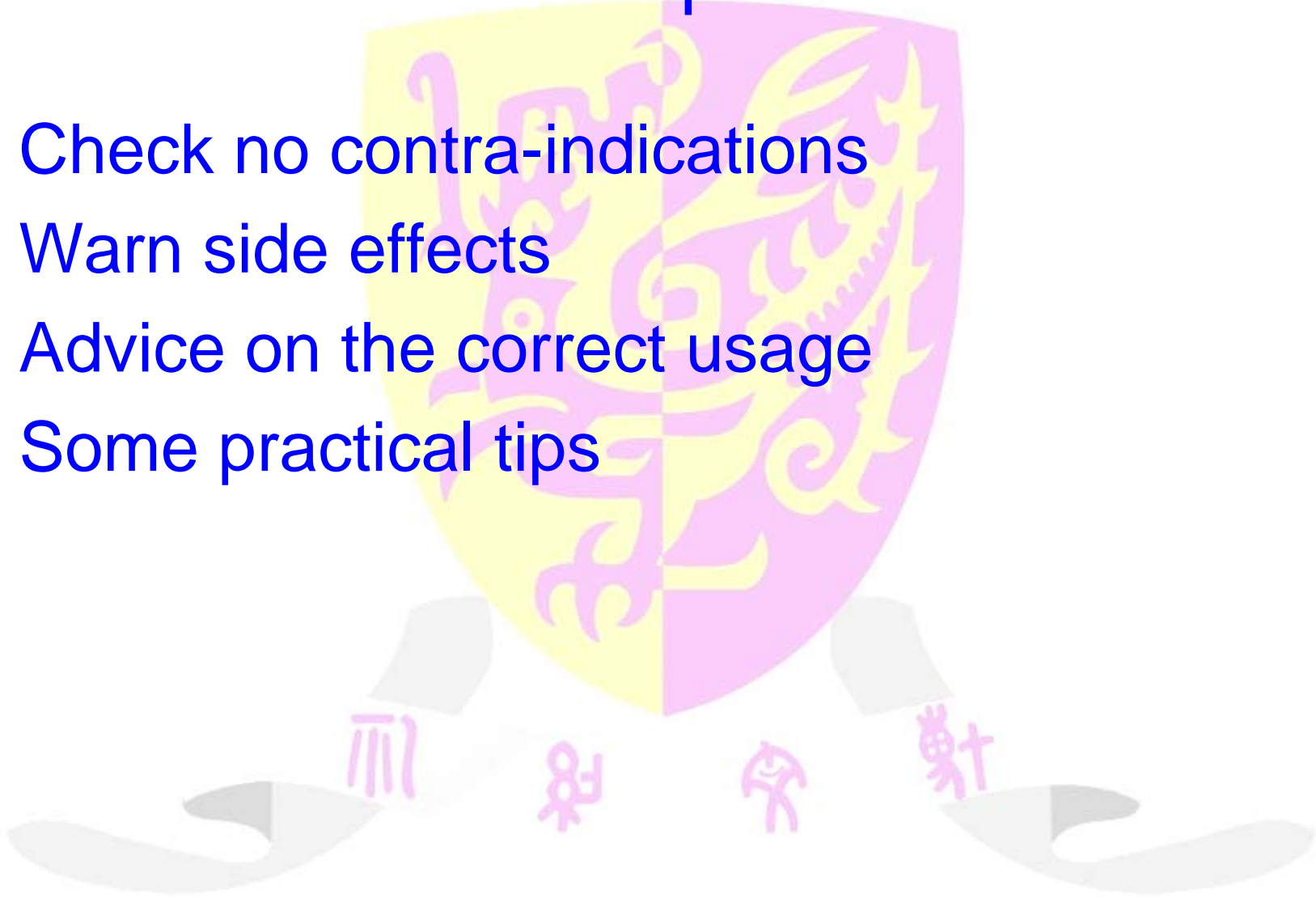


Efficacy – within class

- No data comparing efficacy, efficacy probably similar
- Patient preference and prescriber experience determine choice.
- Can change to another if one ineffective, should at least try 4 times for each drug before considering change.

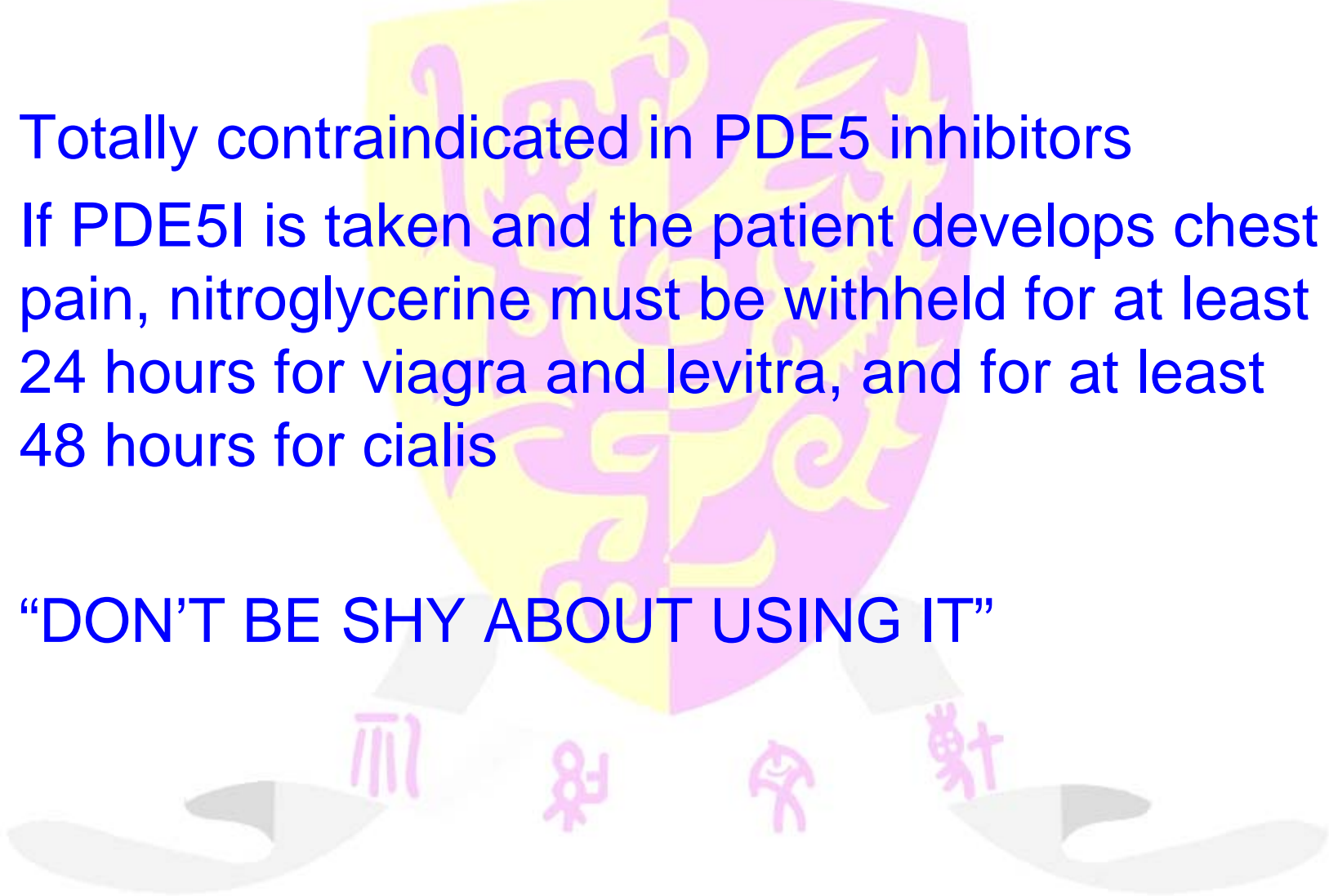
Prescription

- Check no contra-indications
- Warn side effects
- Advice on the correct usage
- Some practical tips



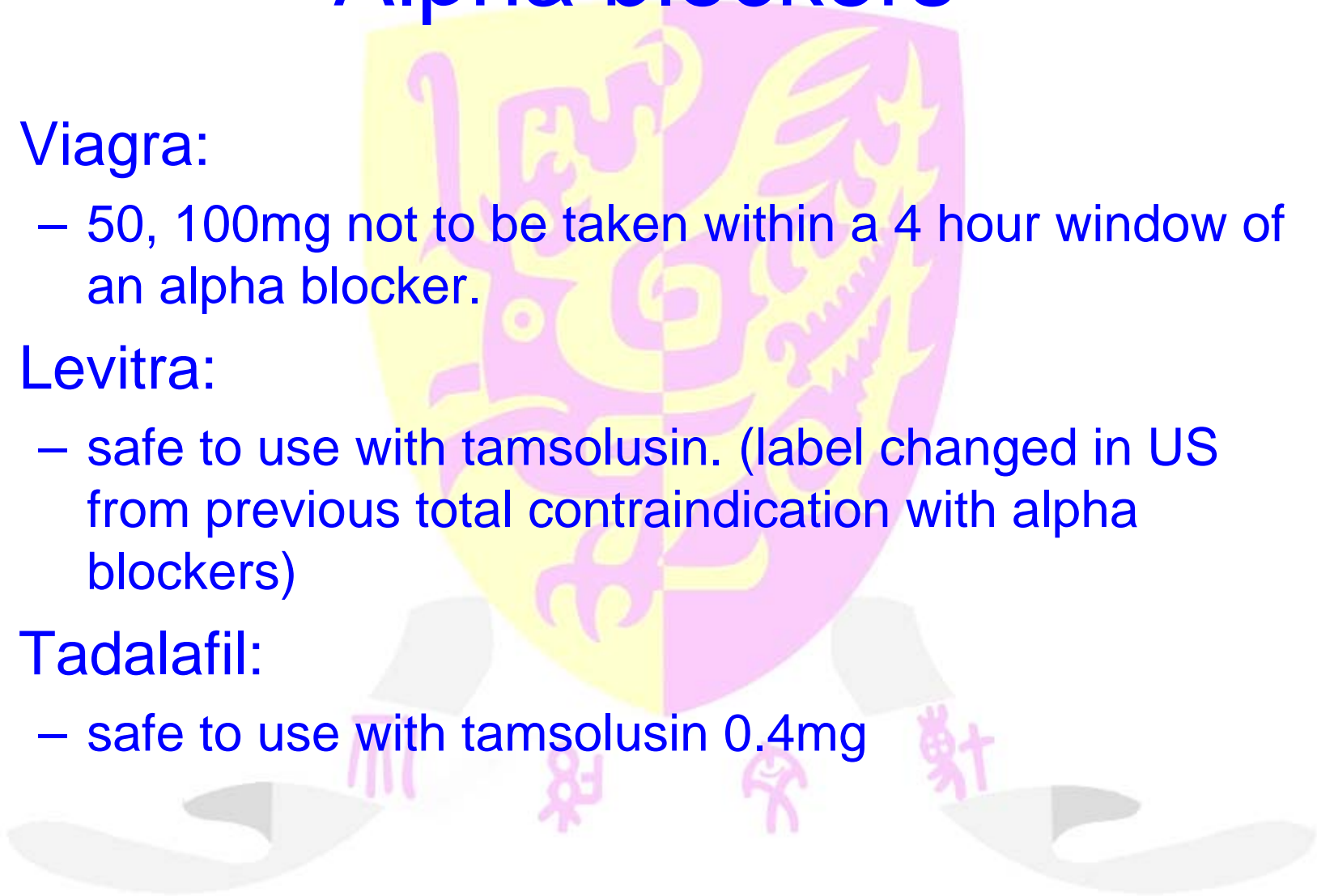
Nitrates

- Totally contraindicated in PDE5 inhibitors
- If PDE5I is taken and the patient develops chest pain, nitroglycerine must be withheld for at least 24 hours for viagra and levitra, and for at least 48 hours for cialis
- “DON’T BE SHY ABOUT USING IT”



Alpha blockers

- Viagra:
 - 50, 100mg not to be taken within a 4 hour window of an alpha blocker.
- Levitra:
 - safe to use with tamsolusin. (label changed in US from previous total contraindication with alpha blockers)
- Tadalafil:
 - safe to use with tamsolusin 0.4mg



Side effects

- Vasodilatation
 - Flushing
 - Headaches
 - Nasal blockage
- Visual problem
- Muscle aches - cialis



Prescription – my personal experience

- Not after meal for Viagra
- ½ hour before sex
- Need sexual stimulation
 - (vs PGE injection)
- If chest discomfort → stop → seek advice → tell the truth...
- Weekend user?? → cialis may be the choice
- 2 packs (total 8 tablets) Viagra/Levitra
 - 1-1-1-1-if not effective-2-2

Response related to dosing

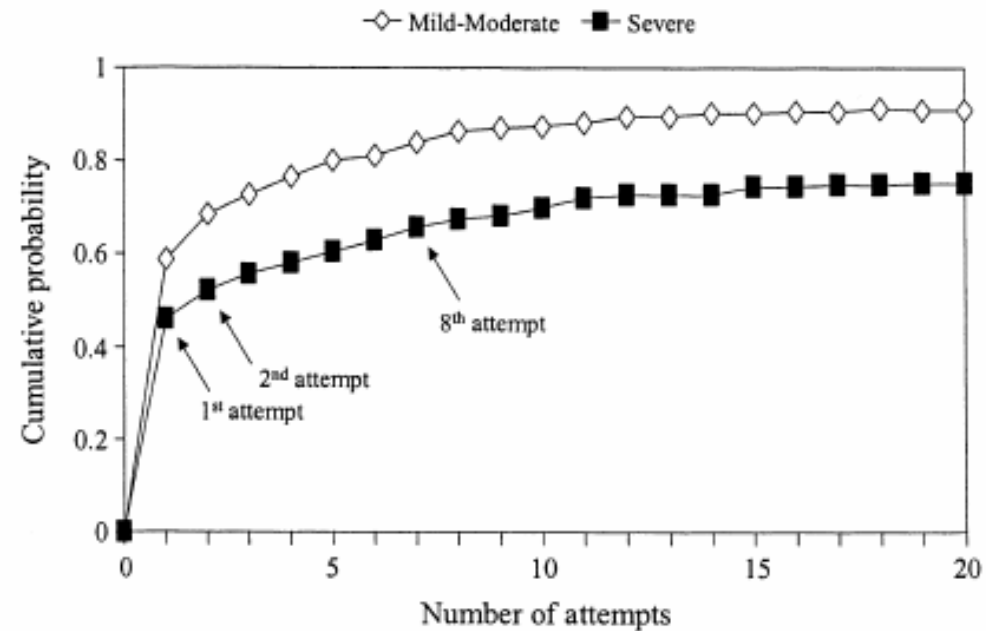
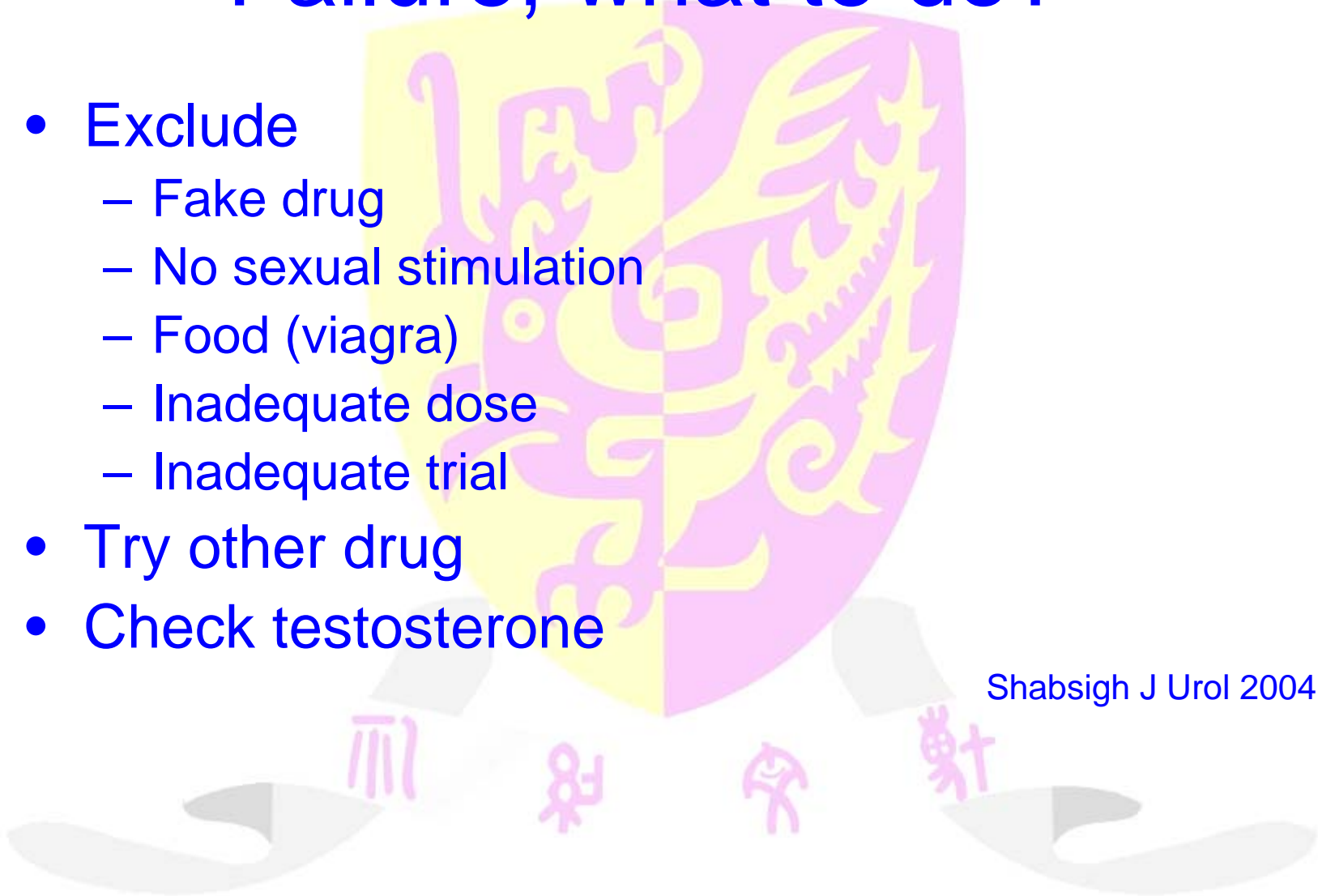


FIGURE 2. Intercourse success rates, as determined from event log data, in men with erectile dysfunction taking sildenafil (top). Intercourse success rates in men stratified by erectile dysfunction severity (bottom).

Failure, what to do?

- Exclude
 - Fake drug
 - No sexual stimulation
 - Food (viagra)
 - Inadequate dose
 - Inadequate trial
- Try other drug
- Check testosterone

Shabsigh J Urol 2004



Conclusion

- Urological problems are common
- Most will be first managed by family physician and also can be continually managed in primary care setting
- Understand the basic management and also the indication for referral to specialist care will be important for primary care physicians