實證醫學病例討論報告
泌尿科

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臨床場景(clinical scenario)

- 1~病人基本資料及主訴
- 2~診斷（包含理學檢查、實驗室檢查、影像學檢查）
- 3~治療方式及對治療的反應
- 4~後續治療計畫

Patient profile

- 劉X盛
- 77 years old
- Male

clinical scenario-基本資料及主訴

- CC: progress dysuria in recent months
- PI:
  - BPH under medical control for several years
  - Progress dysuria in recent months
- Finding:
  - Physical examination: DRE revealed enlarged prostate
  - TRUS: volume: 75ml

clinical scenario

- Diagnosis: BPH
- Treatment : admitted for transurethral resection of prostate

- 對治療的反應: after operation, persistent gross hematuria for 2 days.
- 後續治療計畫: Foley irrigation + transamin usage
- 住院天數: 4 days

提出background questions

Question 1: what's the complications of TURP

- Immediate - within 48 hours:
  - primary haemorrhage
  - septicaemia
  - cardiovascular disturbance due to blood loss, transfusion
  - electrolyte imbalance, particularly hyponatraemia, from excessive absorption of irrigant - "TUR" syndrome

- Intermediate - within 14 days:
  - secondary haemorrhage
  - urinary tract infection
  - chest infection
  - deep vein thrombosis and pulmonary embolism
- Late:
  - urinary incontinence - from permanent damage to bladder sphincter
  - retrograde ejaculation - from disruption of the mechanism at the bladder neck that normally prevents entrance of semen into bladder during ejaculation; erection and orgasm are unaffected
  - bladder neck contracture
  - urethral stricture

Question 2: surgical procedures of BPH ?

- Transurethral resection of the prostate
- Transurethral incision of the prostate
- Laser prostatectomy - photoselective vaporization of prostatic tissue (PVP)
- Open prostatectomy

提出foreground questions

術後持續性血尿，造成住院時間延長，想瞭解是否有其他術式可以減少術後出血及住院時間

將問題寫成PICO

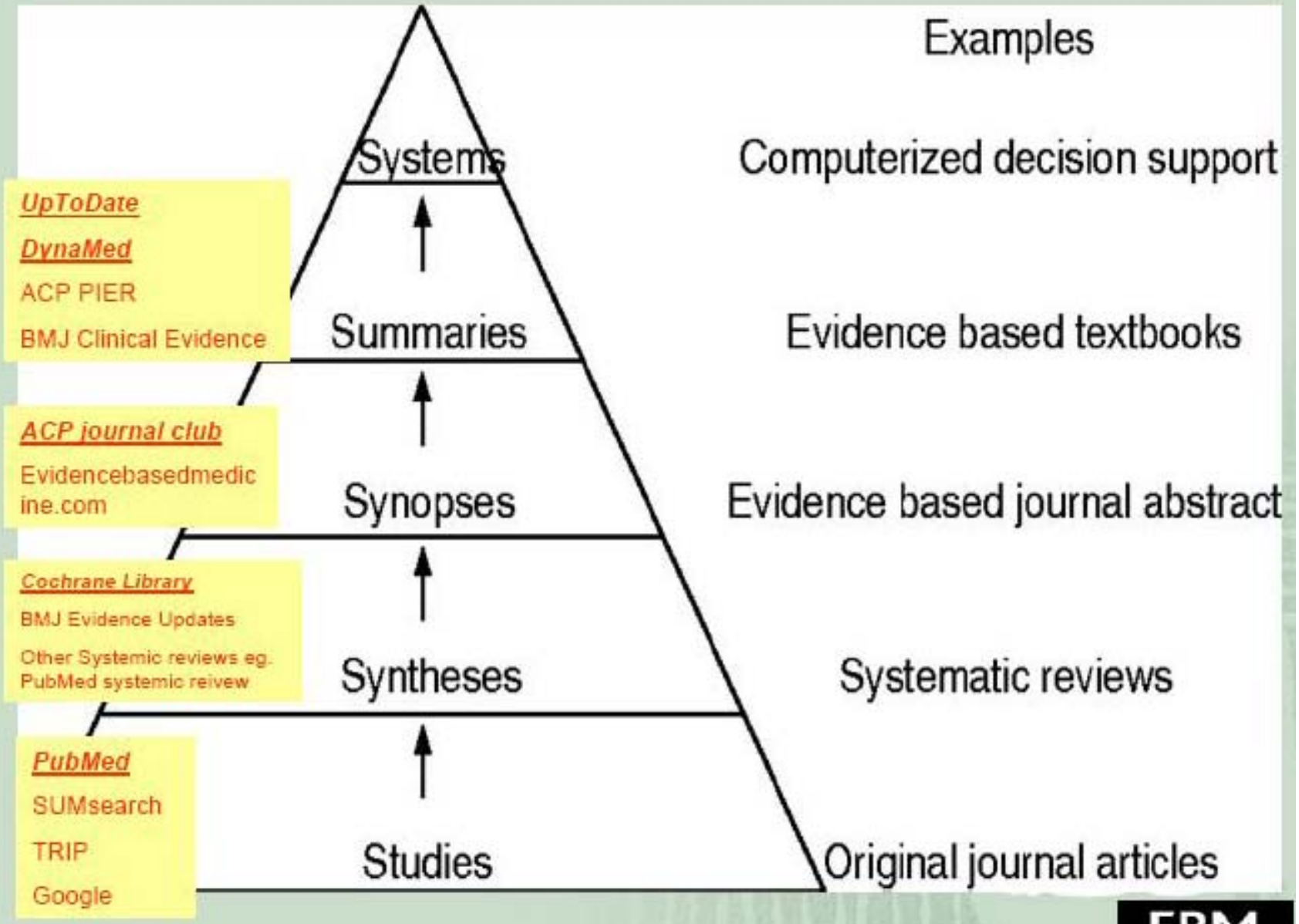
P	Benign prostatic hyperplasia
I	TURP (傳統): transurethral resection of the prostate - 經尿道攝護腺切除術
C	PVP (新技術): photoselective vaporization of the prostate - 綠光雷射攝護腺氣化術
O	Complications, eg: hematuria, days of admission, damage to urethral…

搜尋最有用的資料

先從已經過評讀的database開始找起
(system, synopses, synthesis)
最後再找尚未經過嚴格評讀的study

The "5S" levels of organisation of evidence from healthcare research

Brian Haynes, R Evid Based Med 2006;11:162-164



EBM ONLINE

KTP laser versus transurethral resection: early results of a randomized trial

Bouchier-Hayes DM, Anderson P, Van Appledorn S, Bugeja P, Costello AJ.
Department of Urology, Royal Melbourne Hospital, Melbourne, Australia.

J Endourol. 2006 Aug;20(8):580-5

BACKGROUND AND PURPOSE

- Many technologies have been mooted as equal to transurethral resection of the prostate (TURP) without gaining widespread acceptance because of the lack of randomized trials.
- The Greenlight laser system (Laserscope, San Jose, Ca.), an 80 W system for photovaporization of the prostate (PVP), was compared with TURP in such a trial.

PATIENTS AND METHODS

- A series of 120 patients was randomized to undergo TURP or PVP after evaluation, which was repeated at 1, 3, 6, and 12 months after treatment.
- Irrigation use, length of catherization (LOC), length of hospital stay (LOS), postvoiding residual volume, sexual function, blood loss, cost, and operative time also were assessed.

RESULTS

- To date, 76 patients are evaluable. Both groups showed a significant ($P < 0.5$) increase in maximum flow rate from baseline.

	TURP	PVP	P value
flow increased	from 8.7 to 17.9 mL/sec (149%)	from 8.5 to 20.6 mL/sec (167%)	
IPSS decreased	from 25.4 to 12.4(50.23%)	25.7 to 12.0 (49.83%)	
Postvoiding residual volumes	significant decreases	significant decreases	
quality of life scores	Similar trends		
sexual function	no difference		

	TURP	PVP	P value
length of catherization	44.5 hours (range 6-192 hours)	12.2 hours (range 0-24 hours) 	<0.001
length of hospitalization	3.4 days (range 3-9 days)	1.08 days (range 1-2 days) 	<0.0001
Adverse events	less frequent in the PVP group		

CONCLUSIONS

- This trial demonstrates that PVP is effective compared with TURP, producing equivalent improvements in flow rates and IPSS with markedly reduced LOS, LOC, and adverse events.
- Long-term follow- up is being undertaken to assess the durability of these results.

Comparison of potassium-titanyl-phosphate laser vaporization of the prostate and transurethral resection of the prostate: update of a prospective non-randomized two-centre study

BJUI
BJU INTERNATIONAL

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Study Type – Therapy (case series)
Level of Evidence 4

OBJECTIVES

- To evaluate the intermediate-term clinical efficacy and the rate of complications in 80 W photoselective vaporization of the prostate (PVP) with the potassium-titanyl-phosphate laser (Greenlight, (AMS, Minnetonka, MN, USA) compared with transurethral resection of the prostate (TURP) in a prospective non-randomised two-centre study.

PATIENTS AND METHODS

- From December 2003 to August 2006, 396 patients (PVP 269, TURP 127) with lower urinary tract symptoms secondary to benign prostatic hyperplasia were included in the study.
- There was a significant difference in mean age (72 years for PVP vs 68 for TURP, P = 0.001). Patients were therefore stratified in age categories (<70, 70-80, >80 years) and compared for perioperative variables, functional outcome and complications, with a follow-up of up to 24 months.

RESULTS

- The improvement of peak urinary flow rate was higher after TURP for any age category.
- The International Prostate Symptom Score and postvoid residual volume during the follow-up showed no significant difference.
- After 12 months the overall prostate size reduction was 63% (-30 mL) after TURP and 44% (-27 mL) after PVP.
- The rate of repeat TURP/PVP was higher in the PVP group (6.7% vs 3.9%, not significant) within the follow-up of up to 2 years.

	TURP	PVP	P value
mean operative duration	53 min 	72 min	0.001
Intraoperative bleeding	11%	3% 	0.002
Blood transfusion	5.5%	0% 	0.001
Capsule perforation	6.3%	0.4% 	0.001
Early postoperative clot retention	3.9%	0.4% 	0.001
length of hospitalization	4.7 days	3.0 days 	0.001

- The incidence of urethral and bladder neck strictures was comparable

TABLE 2 Complications during, soon after and late after PVP and TURP

Complications, *n* (%)	PVP	TURP	*P* (chi-square)
Late (within 2 years)			
Bladder neck stricture	12 (4.5)	3 (2.4)	ns
Urethral stricture	12 (4.5)	4 (3.1)	ns
Reoperation (TURP/PVP)	18 (6.7)	5 (3.9)	ns

ns, not significant.

CONCLUSIONS

- PVP was more favourable in terms of perioperative safety. Although patients assigned for PVP were older and had larger prostates, PVP resulted in a similar functional outcome.
- Further follow-up is needed to draw final conclusions about the long-term efficacy of PVP.

PVP versus TURP for prostates larger than 70 ml: a short-term prospective randomized trial

Eur Urol. 2008 Sep;54(3):685-6.Links

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OBJECTIVES

- To compare the short term outcomes of photoselective vaporization (PVP) and transurethral resection of the prostate (TURP) for glands larger than 70 mL in a prospective randomized trial.

METHODS

- Seventy-six consecutive patients with enlarged prostatic adenomas of 70 to 100 mL were randomly assigned for surgical treatment with TURP (n = 37) or PVP (n = 39).
- International Prostate Symptom Score (IPSS), International Index of Erectile Function (IIEF-5) scores, maximum flow rates (Qmax), postvoid urine residues (PVR), and transrectal ultrasound (TRUS) volumes were recorded. Operative data, complications, catheter removal, and hospitalization periods were also recorded.
- Patients were reassessed at 3 and 6 months.

RESULTS

- Baseline characteristics of both groups were similar.
- Mean preoperative TRUS volume was 88 +/- 9.2 mL in the TURP group and 86.1 +/- 8.8 mL in the PVP group.

	TURP	PVP	P value
mean operative duration	51 min 	87 min	<0.05
Catheter removal	3.9 days	1.7 days 	<0.05
length of hospitalization	4.8 days	2.0 days 	<0.05

- A significant difference in IPSS, Qmax values was observed within the follow-up period in favor of the TURP.
- The percentage volume reduction was significantly higher in TURP group.
- Reoperation was necessary in 7 patients in PVP but none in TURP group.

CONCLUSIONS

- Although PVP offers advantageous over TURP with regard to intraoperative and perioperative safety, early functional results of TURP are superior to PVP in patients with enlarged prostates larger than 70 mL

Method

證據等級

Level	與[治療/預防/病因/危害]有關的文獻
1a	用多篇RCT所做成的綜合性分析(SR of RCTs)
1b	單篇RCT(有較窄的信賴區間)
1c	All or none
2a	用多篇世代研究所做成的綜合性分析
2b	單篇cohort及低品質的RCT
2c	Outcome research / ecological studies
3a	SR of case-control studies
3b	Individual case-control studies
4	Case-series (poor quality :cohort / case-control studies)
5	沒有經過完整評讀醫學文獻的專家意見

Grades of Recommendation

A	consistent level 1 studies
B	consistent level 2 or 3 studies ***or*** extrapolations from level 1 studies
C	level 4 studies ***or*** extrapolations from level 2 or 3 studies
D	level 5 evidence ***or*** troublingly inconsistent or inconclusive studies of any level

使用work sheet嚴格評讀

Should these valid, potentially important results of a critical appraisal about a harmful treatment change the treatment of your patient?	
Can the study results be extrapolated to your patient?	YES
What are your patient's preferences, concerns and expectations from this treatment?	減少住院時間 減少術後併發症 改善術後生活品質
What alternative treatments are available?	Choose PVP if the patient could afford.

Apply

結合醫學倫理方法

將study的結果應用在病人身上

醫療現況	病人意願
以TURP治療大部分的患者,可有效改善BPH的症狀,但住院天數較久; 以PVP治療,也可有效改善BPH的症狀,住院天數及併發症較TURP少,但手術時間較長且目前需自費.	供給病人數據及價格,讓病人自由選擇
生活品質	**社會脈絡**
兩者皆可有效改善生活品質	健保只幾付TURP,若要施行PVP病人得自費

Audit（自我評估）

在「提出臨床問題」方面的自我評估

- 我提出的問題是否具有臨床重要性？是，可以作爲治療參考。
- 我是否明確的陳述了我的問題？
  - 我的foreground question 是否可以清楚的寫成PICO？可
  - 我的background question是否包括what, when, how, who等字根？未能全部包括
- 我是否清楚的知道自己問題的定位？（亦即可以定位自己的問題是屬於診斷上的、治療上的、預後上的或流行病學上的），並據以提出問題？知道，屬於治療範疇
- 對於無法立刻回答的問題，我是否有任何方式將問題紀錄起來以備將來有空時再找答案？ 有

在「搜尋最佳證據」方面的自我評估

- 我是否已盡全力搜尋？是
- 我是否知道我的問題的最佳證據來源？是
- 我是否從大量的資料庫來搜尋答案？是
- 我工作環境的軟硬體設備是否能支援我在遇到問題時進行立即的搜尋？學校資源便利。
- 我是否在搜尋上愈來愈熟練了？是。
- 我會使用「斷字」、布林邏輯、同義詞、MeSHterm，限制（limiters)等方法來搜尋？部份會。
- 我的搜尋比起圖書館人員或其他對於提供病人最新最好醫療有熱情的同事如何？需要加強。

改變「醫療行爲」的自我評估

- 當最佳證據顯示目前臨床策略需改變時，我是否遭遇任何阻止改變的阻力？沒有
- 我是否因此搜尋結果而改變了原來的治療策略？做了那些改變？要看病人的意願。

效率評估

- 這篇報告，我總共花了多少時間？ 三天
- 我是否覺得這個進行實證醫學的過程是值得的？值得。
- 我還有那些問題或建議？ 目前綠光雷射應用的時間還不夠, follow up 的時間也不夠長, 有待evidence更高的trial出現 .

Thank for your attention