



TMU-Research Center of Urology and Kidney Monthly Meeting

Times : **2025/5/22(Thursday) 9:00-10:00**

Google meet link : <https://meet.google.com/ihn-wugo-jfv>

Meeting Chairperson : Kuan-Yu Hung

Participant :

【TMUH】 Ming-Che Liu 、 Yao-Chou Tsai 、 Shauh-Der Yeh 、 Chien-Chih Wu 、 Hsiao-Yu Lin 、 Jeng-Cheng Wu 、 Ching-Hsin Chang 、 Wei-Chieh Chen 、 Fang-Yu Ku 、 Shih-Hsiu Lo 、 Te-Chao Fang 、 Hsi-Hsien Chen 、 Yen-Chung Lin 、 Chih-Chin Kao 、 Ching-Yi Chen 、 Shu-Ching Yeh 、 TING-EN TAI

【WFH】 Yu-Ching Wen 、 Liang-Ming Lee 、 Ke-Hsun Lin 、 Yung-Wei Lin 、 Chi-Hao Hsiao 、 Syuan-Hao Syu 、 Chung-Howe Lai 、 Yung-Ho Hsu 、 Chih-Chen Hsu 、 Tso-Hsiao Chen 、 Cho-Hsing Chung 、 Chung-Yi Cheng 、 Chung-Te Liu 、 Yun-Hong Yang 、 Ming-Che Lee 、 Yueh-Lin Wu 、 I-Wen Wu

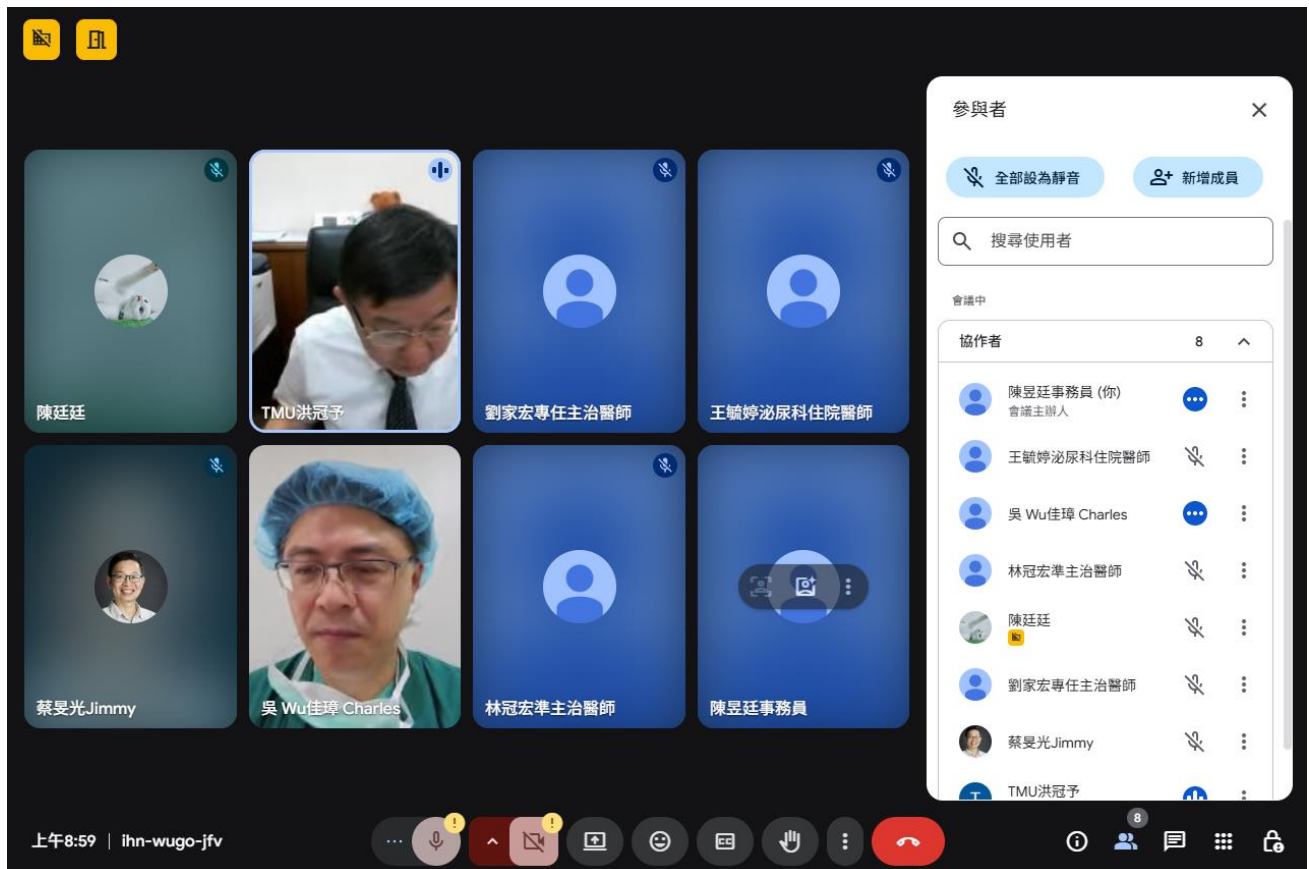
【SHH】 Mai-Szu Wu 、 Chia-Chang Wu 、 Chia-Hung Liu 、 Yi-Te Chiang 、 Kai-Yi Tzou 、 Wei-Tang Kao 、 Su-Wei Hu 、 Wen-Ling Wu 、 Mei-Yi Wu 、 Lie-Yee Hung 、 Cai-Mei Zheng 、 Yu-Wei Chen 、 Chia-Te Liao 、 Cheng-Hsien Chen 、 Hui-Wen Chiu 、 Po-Han Yu 、 Tze-Wah Kao 、 Kuan-Hung Lin

【SKMH】 Yuh-Mou Sue 、 Chu-Lin Chou

Chief : Mai-Szu Wu (President, TMU) 、 Chih-Cheng Hsu (Professor, NHRI) 、 Ke-Hung Tsui (Vice President, SHH) 、 Shing-Hwa Lu

Agenda :

1. Functional Urological Team
2. Acute Kidney Disease Team



膀胱內高濃度血小板血漿注射 對間質性膀胱炎/膀胱疼痛症候群之治療效益

The effect of intravesical platelet-rich plasma injection for interstitial cystitis/bladder pain syndrome

泌尿腎臟研究中心共識營(RCUK)

報告者：雙和醫院 董劭偉 醫師
雙和醫院 王毓婷 醫師

Interstitial Cystitis/Bladder Pain Syndrome (IC/BPS)

- Unpleasant sensation centering bladder
 - Pain, pressure, and discomfort especially during bladder filling
- Often accompanied by urinary frequency and urgency
- Absence of infection/other identifiable causes
- Chronic in nature and detrimental to quality of life

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Etiology

- Infection theory
- Autoimmune theory
- **Leaky lining theory**
 - Defected mucous layer (normally made by glycosaminoglycans)
 - Urine content crossing urothelium to induce inflammation

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Treatment options

- Behavioral modification
- Oral Medications (Analgesics, amitriptyline, antihistamine, pentosan polysulfate, cyclosporine A)
- Intravesical instillation
- DMSO, heparin, and/or lidocaine
- Cystoscopic hydrodistention
- Fulguration (electrocautery)/triamcinolone injection
- Intradetrusor Botox injection
- Neuromodulation
- Cystectomy

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Plasma-rich Platelet (PRP) Injection

- Injection of autologous blood with concentrated platelets
- Plentiful signalling proteins
 - **Growth factors, chemokines, and cytokines...etc**
- **Anti-inflammatory effect and tissue regenerative capacity**
- Current indication: musculoskeletal disease

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Intravesical injections of platelet-rich plasma is effective and safe in treatment of interstitial cystitis refractory to conventional treatment—A prospective clinical trial

Jia-Fong Jhang, Teng-Yi Lin, Hann-Chorng Kuo 

First published: 21 December 2018 | <https://doi.org/10.1002/nau.23898> | Citations: 26

- Single arm study (n=40)
- Inclusion: female IC/BPS refractory to conventional treatment
- Monthly PRP injections x4
- **Significant improvement** since the 1st injection until 3 months after treatment completion
 - **Subjective questionnaires** (GRA, OSS, and VAS)
 - **Functional bladder capacity**
 - **Urinary frequency, urgency, and nocturia**

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Article | [Open access](#) | Published: 16 September 2020

Repeated intravesical injections of platelet-rich plasma improve symptoms and alter urinary functional proteins in patients with refractory interstitial cystitis

[Yuan-Hong Jiang](#), [Yuh-Chen Kuo](#), [Jia-Fong Jhang](#), [Cheng-Ling Lee](#), [Yung-Hsiang Hsu](#), [Han-Chen Ho](#) & [Hann-Chorng Kuo](#) 

- **Significant change in urinary biomarkers** along symptom improvement
 - Nerve growth factor, matrix metalloproteinase-13, vascular endothelial growth factor ↓↓
 - Platelet-derived growth factor-AB ↑↑

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Therapeutic Efficacy of Intravesical Platelet-Rich Plasma Injections for Interstitial Cystitis/Bladder Pain Syndrome—A Comparative Study of Different Injection Number, Additives and Concentrations

Yuan-Hong Jiang¹, Jia-Fong Jhang¹, Teng-Yi Lin², Han-Chen Ho³, Yung-Hsiang Hsu⁴ and Hann-Chorng Kuo^{1*}

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10ml PRP	
4 low-dose subgroup	1 high-dose group
• in N/S injected at 20 sites	• in N/S injected at 20 sites • in PPP injected at 20 sites • in N/S injected at 40 sites • in PPP injected at 40 sites

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Our experience

- Retrospective review
- 112/01/01-114/06/30

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PICO

Patient/Problem	間質性膀胱炎/膀胱疼痛症候群之女性患者
Intervention	膀胱內PRP注射 + 水擴張治療
Comparison	受試者治療後與治療前的狀態比較
Outcome	症狀問卷調查表： 1) O'Leary Sant Score，內含Interstitial cystitis symptom index與Interstitial cystitis problem index

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O'Leary Sant Score (ICSI/ICPI)

★ IC症狀指數 (Interstitial Cystitis Symptom Index, ICSI) · 總分：_____						
	完全 不會	少於 1/5	少於 1/2	大約 1/2	超過 1/2	幾乎 每次
1. 在過去一個月內，你是否有無預警地強烈感覺要小便？有多常發生這種情形？ (URGENCY)	0	1	2	3	4	5
2. 在過去一個月內，你是否在小便完 2 小時內又覺得要小便？有多常發生這種情形？ (RESIDUAL SENSATION)	0	1	2	3	4	5
3. 在過去一個月內，你最常在晚上起來上幾次廁所？ (NOTURIA)	0	1	2	3	4	5
4. 在過去一個月內，你會感覺到膀胱疼痛或有灼熱感嗎？ (PAIN)	0	1	2	3	4	5
FBC= _____ ML, D= _____/N						

★ IC 問題指數 (Interstitial Cystitis Problem Index, ICPI) · 總分：_____					
過去一個月間，以下的症狀對你而言是個困擾的問題					
	沒有問 題	很小的 問題	小問題	中等問 題	大問題
白天頻尿 (FREQUENCY)	0	1	2	3	4
夜間頻尿 (NOCTURIA)	0	1	2	3	4
突然感覺急著要小便 (URGENCY)	0	1	2	3	4
膀胱灼熱疼痛不舒服或有壓迫感 (PAIN)	0	1	2	3	4

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排除條件

- 尿路感染篩檢陽性
- 有顯著血尿(>RBC 5/HPF)
- 有其他明顯造成下泌尿道症狀之病因：膀胱無力、應力性尿失禁、尿路出口阻塞、腦部或神經源性疾病、糖尿病控制不佳 (糖化血色素 ≥ 8)、尿路結石等
- 過去六個月內有接受泌尿道手術
- 過去六個月內有接受圍繞會陰的手術或會陰有傷口、感染
- 有潛在泌尿系統癌症
- 有明顯凝血功能異常、肝腎功能衰竭、或嚴重心血管疾病
- 曾接受骨盆腔放射線治療或有骨盆腔器官惡性腫瘤史
- 有合併其他疾病或傷害所造成之慢性骨盆腔疼痛
- 過去六個月因排尿功能不佳而需常規導尿
- 過去12個月內有藥物或酒精濫用史

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膀胱內PRP注射 + 水擴張治療

PRP備製與注射

每次療程於刀房抽取20ml的血液，經離心處理後可萃取出約5ml的PRP，將這些血漿以每0.25ml為單位隨機但均勻的注射到膀胱後壁與側壁粘膜下層約0.1公分的深度，總計注射次數共20針。

水擴張

完成膀胱內注射後立即進行水擴張治療，將生理食鹽水吊於離受試者身體水平面80公分的高度，使水流能透過重力被持續灌注到膀胱，灌注共計五分鐘以完成水擴張治療。

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劑量較低

Our experience

- Retrospective review
- 112/01/01-114/06/30
- 9 patients
- 4/9 with data available for analysis

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Case 1

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Case 1

- 74-year-old female patients
- Received operations on 112/10/16, 112/12/11, 113/01/15
- Chief complaint: bladder pain resulting in frequency

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Case 1

	ICSI	
	Before	After
Urgency	0	0
Frequency (daytime)	4	3
Frequency (nighttime)	4	2
Bladder pain	4	2
Total	12	7

	ICPI (Impact on quality of life)	
	Before	After
Frequency (daytime)	4	3
Frequency (nighttime)	4	3
Urgency	0	0
Bladder pain	4	3
Total	12	9

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Case 2

18

Case 2

- 60-year-old female patients
- Received operations on 112/11/14, 113/01/22
- Chief complaint: bladder pain resulting in frequency

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Case 2

	ICSI	
	Before	After
Urgency	0	0
Frequency (daytime)	3	1
Frequency (nighttime)	4	1
Bladder pain	4	1
Total	11	3

	ICPI (Impact on quality of life)	
	Before	After
Frequency (daytime)	0	0
Frequency (nighttime)	4	0
Urgency	0	0
Bladder pain	4	0
Total	8	0

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Case 3

21

Case 3

- 43-year-old female patients
- Received operations on 11/3/02/02
- Chief complaint: frequency

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Case 3

	ICSI	
	Before	After
Urgency	0	0
Frequency (daytime)	3	2
Frequency (nighttime)	4	2
Bladder pain	0	0
Total	7	4

	ICPI (Impact on quality of life)	
	Before	After
Frequency (daytime)	4	3
Frequency (nighttime)	4	3
Urgency	0	0
Bladder pain	0	0
Total	8	6

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Case 4

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Case 4

- 43-year-old female patients
- Received operations on 11/3/05/06
- Chief complaint: bladder pain

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Case 4

	ICSI	
	Before	After
Urgency	0	0
Frequency (daytime)	0	0
Frequency (nighttime)	0	0
Bladder pain	4	0
Total	4	0

	ICPI (Impact on quality of life)	
	Before	After
Frequency (daytime)	0	0
Frequency (nighttime)	0	0
Urgency	0	0
Bladder pain	4	0
Total	4	0

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Total Score and Change

Total	ICSI	ICPI
Case 1	12 → 7 (-5)	12 → 9 (-3)
Case 2	11 → 3 (-8)	8 → 0 (-8)
Case 3	7 → 4 (-3)	8 → 6 (-2)
Case 4	4 → 0 (-4)	4 → 0 (-4)

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Summary

IC/BPS treatment remains challenging.

Intravesical PRP is a potential regenerative approach for symptom relief.

Our experience symptom improvement and good tolerability.

No severe adverse effects were observed.

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Summary

PRP delivers growth factors that aid urothelial healing and reduce inflammation.

Compared to Botox, PRP may lower the risk of urinary retention.

Standardized protocols for PRP preparation and administration are needed.

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Future

Conduct larger, prospective controlled trials.

PRP may also be useful for ketamine cystitis and other bladder diseases.

Biomarkers could help diagnose and guide precise PRP injection sites for better outcomes."

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臺北醫學大學
泌尿腎臟研究中心
TMU Research Center of
Urology and Kidney

急性腎病團隊
oXiris experience
during 109/01 – 114/03 at SHH
報告人：林冠宏 醫師

114.06.26

The four principles of medical ethics

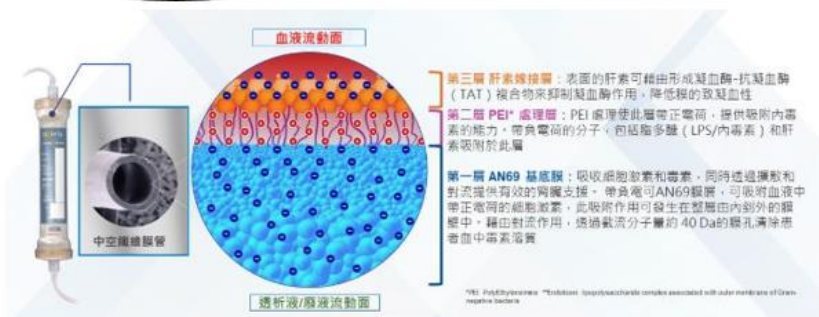
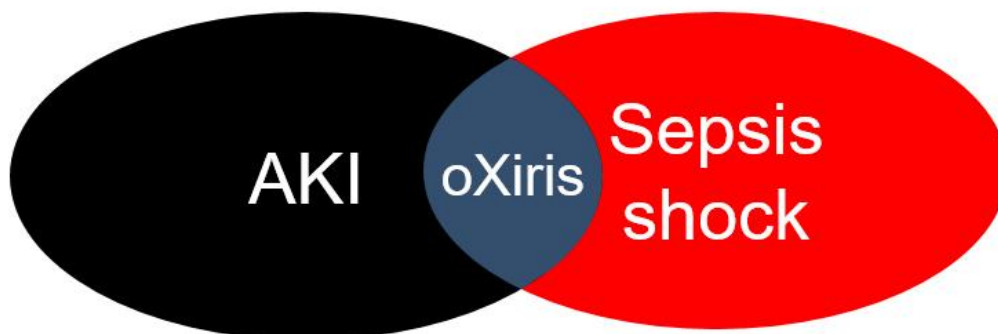


- Autonomy
- Beneficence
- Non-maleficence
- Justice

Evidence-based medicine

P	GNB sepsis
I	infection source control, antibiotics, cardiopulmonary support + hemadsorption
C	infection source control, antibiotics, cardiopulmonary support
O	ICU stay, AKD and RRT dependent, mortality

Oxiris®: Does it really a LIFESAVER ?



Hemadsorption

- **nonspecific adsorbents :**
 - charcoal
 - resins
- **adsorptive membranes :**
 - polymethyl methacrylate (PMMA)
 - AN69ST
 - **Polymyxin B**: EUPHAS trial 、 EUPHRATES
 - LPS Adsorber
 - **CytoSorb**
 - **Oxiris**

PMX-B : EUPHAS trial

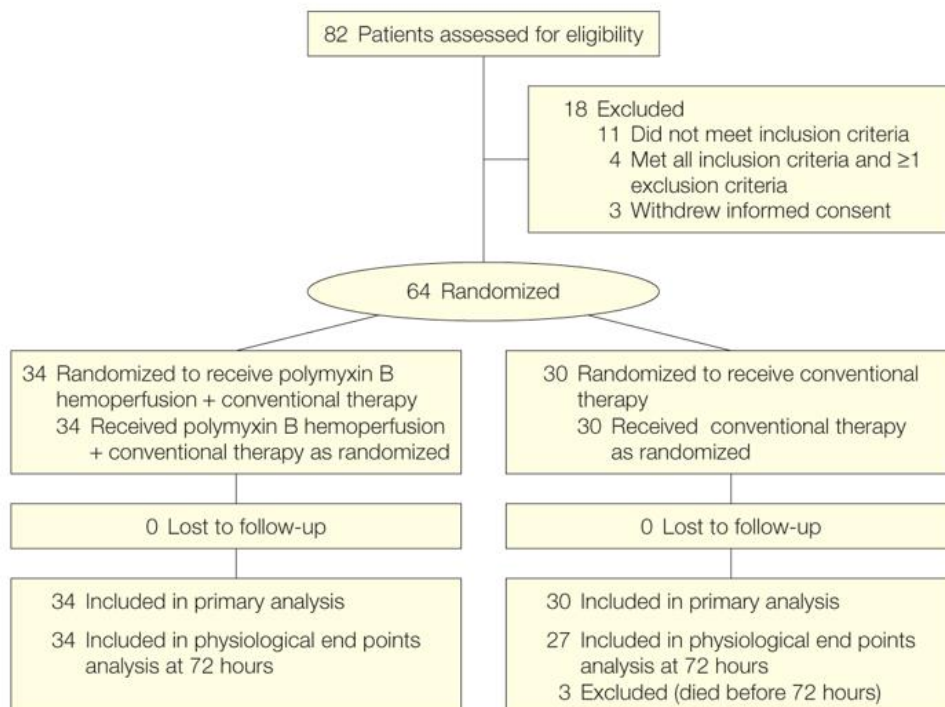


Table 1. Baseline Characteristics of the Treatment Groups^a

Characteristics	Mean (95% Confidence Interval)		P Value
	Polymyxin B Hemoperfusion (n = 34)	Conventional Therapy (n = 30)	
Age, y	61 (57-66)	67 (61-72)	.09
Male sex, No. (%)	24 (71)	18 (60)	.53
APACHE II score	21 (19-23)	20 (18-23)	.86
SOFA score	11 (10-12)	9 (8-11)	.07
Mean arterial pressure, mm Hg	76 (72-80)	74 (70-78)	.40
Noradrenaline, µg/kg/min	0.27 (0.17-0.36)	0.24 (0.13-0.36)	.70
Dopamine, µg/kg/min	3.1 (1.7-4.4)	4.6 (2.9-5.6)	.13
Inotropic score	29.9 (20.4-39.4)	28.6 (16.6-40.7)	.85
Vasopressor dependency index, mm Hg ⁻¹	4.3 (2.7-5.9)	4.1 (2.3-6.0)	.87
White blood cell count, 1000/µL	13.7 (11.4-16.0)	11.4 (9.0-13.8)	.12
PaO ₂ /FIO ₂	235 (206-265)	217 (188-247)	.53
Diuresis, mL/h	66 (50-90)	87 (59-116)	.22
Creatinine, mg/dL	2.3 (1.7-2.9)	1.7 (1.3-2.2)	.18
Renal replacement therapy, No. (%)	13 (38)	6 (20)	.17

Abbreviations: APACHE II, Acute Physiology and Chronic Health Evaluation II; FIO₂, fraction of inspired oxygen; SOFA, Sequential Organ Failure Assessment.

SI conversion: To convert creatinine to µmol/L, multiply by 88.4.

^aPatients in the polymyxin B hemoperfusion group were treated with 2 sessions of direct hemoperfusion with polymyxin B in addition to standard conventional therapy. Range of APACHE II score was 0 to 71, with lower scores indicating better organ function. Range of SOFA score was 0 to 24, with lower scores indicating better organ function. See "Methods" section for formulas for inotropic score and vasopressor dependency index.

Table 2. Isolated Microorganisms by Treatment Group

Organisms and Sites	Polymyxin B Hemoperfusion	Conventional Therapy
Organisms		
<i>Escherichia coli</i>	10	10
<i>Pseudomonas</i> species	7	5
<i>Bacillus</i> species	1	0
<i>Enterococcus</i> species	5	0
<i>Staphylococcus</i> species	3	0
<i>Streptococcus</i> species	1	0
<i>Candida</i> species	6	5
<i>Enterobacter</i> species	4	1
<i>Klebsiella</i> species	1	0
<i>Proteus</i> species	1	3
<i>Corynebacterium</i> species	0	1
<i>Aspergillus</i> species	0	1
<i>Serratia</i> species	0	2
Sites		
Peritoneal, abdominal fluid, drainage	9	10
Blood	16	3
Urine	2	1
Other	2	2
Multiple organisms	13	9
Multiple sites	6	1

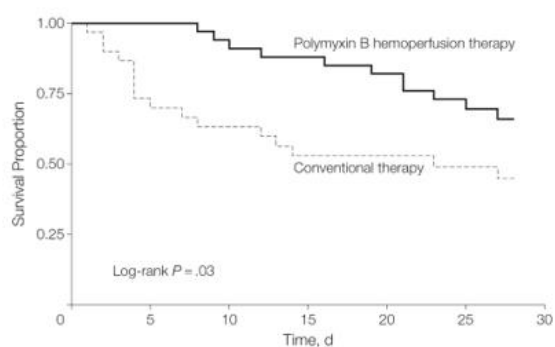
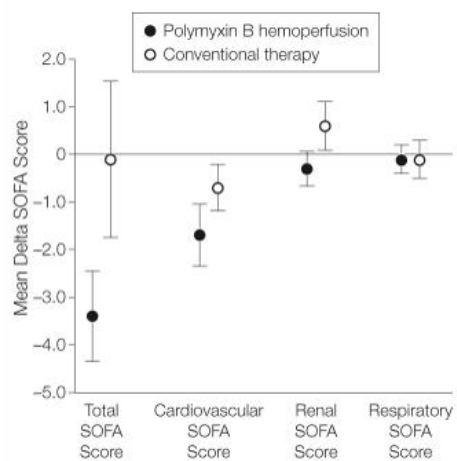
Table 3. Physiological End Points by Treatment Group at Baseline and 72 Hours^a

Physiological End Points	Polymyxin B Hemoperfusion			Conventional Therapy		
	Mean (95% CI)		P Value	Mean (95% CI)		P Value
	Baseline (n = 34)	72 Hours (n = 34)		Baseline (n = 30)	72 Hours (n = 27)	
Mean arterial pressure, mm Hg	76 (72-80)	84 (80-88)	.001	74 (70-78)	77 (72-82)	.37
Inotropic score	29.9 (20.4-39.4)	6.8 (2.9-10.7)	<.001	28.6 (16.6-40.7)	22.4 (9.3-35.5)	.14
Vasopressor dependency index, mm Hg ⁻¹	4.3 (2.7-5.9)	0.9 (0.3-1.5)	<.001	4.1 (2.3-6.0)	3.3 (1.3-5.3)	.26
PaO ₂ /FiO ₂	235 (206-265)	264 (236-292)	.049	217 (188-247)	228 (199-258)	.79
Renal replacement therapy, No. (%)	13 (38)	15 (44)	.50	6 (20)	8 (30)	.50

Abbreviations: CI, confidence interval; FiO₂, fraction of inspired oxygen.^aSee "Methods" section for formulas for inotropic score and vasopressor dependency index. In the conventional therapy group, 3 patients died before 72 hours (n=27).**Table 4.** All-Cause Mortality Rates by Treatment Group

	28 Days		In-Hospital	
	Polymyxin B Hemoperfusion	Conventional Therapy	Polymyxin B Hemoperfusion	Conventional Therapy
No. of deaths	11	16	14	20
Time at risk, d	805	491	1265	960
Mortality rate per 100 patient-days, mean (95% CI)	1.4 (0.8-2.4)	3.2 (2.0-5.3)	1.1 (0.6-1.9)	2.1 (1.3-3.2)

Abbreviation: CI, confidence interval.



No. at risk

Time (d)	0	5	10	15	20	25	30
Polymyxin B hemoperfusion therapy	34	34	32	30	27	22	18
Conventional therapy	30	22	19	15	15	12	11

added to conventional therapy significantly improved hemodynamics and organ dysfunction and reduced 28-day mortality in a targeted population with severe sepsis and/or septic shock from intra-abdominal gram-negative infections

Cruz DN, Antonelli M, Fumagalli R, et al. Early use of polymyxin B hemoperfusion in abdominal septic shock: the EUPHAS randomized controlled trial. JAMA. 2009;301:2445-2452.

PMX-B : EUPHRATES trial

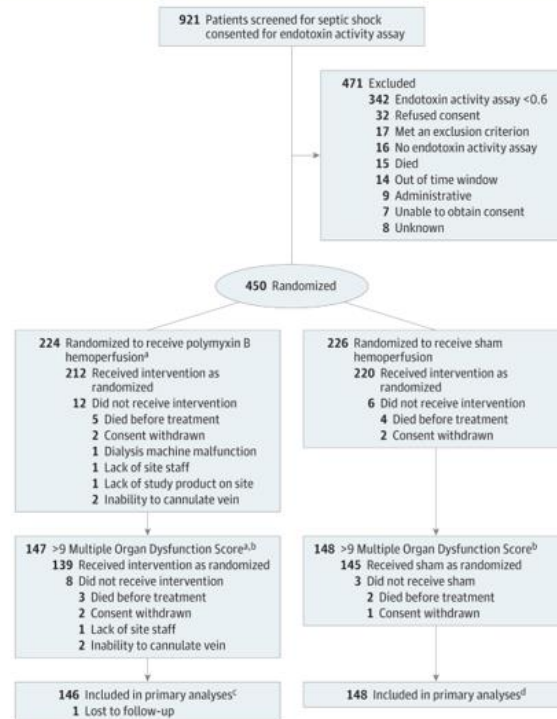


Table 1. Baseline Characteristics of All Participants and Those With a MODS of More Than 9^a

Variables	All Participants, No. (%)		MODS >9 Population, No. (%)	
	Polymyxin-B Hemoperfusion (n = 224)	Sham (n = 226)	Polymyxin-B Hemoperfusion (n = 147)	Sham (n = 148)
Age, mean (SD), y	60.9 (15.1)	58.8 (14.7)	59.5 (15.1)	59.2 (14.0)
Sex				
Women	84 (37.5)	93 (41.2)	51 (34.7)	57 (38.5)
Men	140 (62.5)	133 (58.8)	93 (65.3)	91 (61.5)
Race/ethnicity				
White	183 (81.7)	187 (82.7)	119 (81.0)	112 (75.7)
Black	22 (9.8)	13 (5.8)	13 (8.8)	13 (8.8)
Hispanic	10 (4.5)	12 (5.3)	7 (4.8)	10 (6.8)
Asian	3 (1.3)	9 (4.0)	2 (1.4)	8 (5.4)
Other ^b	6 (2.7)	5 (2.2)	6 (4.1)	5 (3.4)
Arterial pressure, mean (SD), mm Hg	71.8 (9.9)	73.3 (10.5)	71.0 (9.7)	72.9 (10.6)
APACHE II score, mean (SD) ^c	29.4 (9.0)	28.1 (8.5)	32.0 (8.8)	30.5 (8.1)
MODS score, mean (SD)	10.0 (3.3)	10.0 (3.3)	11.9 (2.0)	11.9 (1.8)
Mechanical ventilation	208 (93.0)	217 (96.0)	142 (97.9)	147 (99.3)
Microorganisms ^d				
No growth	73 (32.9)	78 (34.7)	49 (33.3)	44 (29.7)
Gram negative	53 (23.9)	30 (13.3)	36 (24.5)	21 (14.2)
Gram positive	49 (22.1)	51 (22.7)	31 (21.1)	41 (27.7)
Other	15 (6.8)	15 (6.7)	10 (6.8)	9 (6.1)
Mixed	32 (14.4)	51 (22.7)	21 (14.3)	33 (22.3)
Bacteremia ^e	72 (33.0)	62 (28.1)	48 (33.1)	45 (30.8)

Site of infection				
Intra-abdominal	71 (32.4)	80 (35.7)	48 (33.6)	56 (37.8)
Lung	75 (34.3)	87 (38.8)	50 (35.0)	56 (37.8)
Mixed	10 (4.6)	13 (5.8)	7 (4.9)	7 (4.7)
Other ^f	63 (28.8)	44 (19.6)	38 (26.6)	29 (19.6)
Cumulative vasopressor index, mean (SD) ^g				
0 to ≤5	102 (45.7)	89 (39.4)	55 (37.7)	49 (33.1)
6 to ≤10	86 (38.6)	109 (48.2)	63 (43.2)	77 (52.0)
11 to ≤15	33 (14.8)	25 (11.1)	27 (18.5)	19 (12.8)
16 to ≤20	2 (0.9)	3 (1.3)	1 (0.7)	3 (2.0)
Norepinephrine dose, mean (SD), µg/kg/min				
0 to ≤0.05	18 (8.0)	11 (4.9)	8 (5.4)	4 (2.7)
0.05 to ≤0.1	34 (15.2)	27 (12.0)	22 (15.0)	15 (10.1)
>0.1	159 (71.0)	177 (78.3)	112 (76.2)	122 (82.4)
Missing or not applicable	13 (5.8)	11 (4.9)	5 (3.4)	7 (4.7)
AKIN AKI stage ^h				
No AKI	59 (26.3)	59 (26.1)	26 (17.7)	27 (18.2)
Stage 1	28 (12.5)	31 (13.7)	18 (12.2)	19 (12.8)
Stage 2	33 (14.7)	27 (12.0)	19 (12.9)	18 (12.2)
Stage 3	104 (46.4)	109 (48.2)	84 (57.1)	84 (56.8)
Renal replacement therapy	47 (21.0)	62 (27.4)	37 (25.2)	45 (30.4)
Endotoxin activity assay levels, mean (SD)	0.77 (0.1)	0.77 (0.1)	0.80 (0.2)	0.80 (0.2)
Range, No. (%)				
0.60 to 0.69	70 (31.3)	78 (34.5)	49 (33.3)	49 (33.1)
0.70 to 0.79	54 (24.1)	63 (27.9)	28 (19.1)	39 (26.4)
0.80 to 0.89	57 (25.5)	49 (21.7)	36 (24.5)	31 (21.0)
0.90 to 0.99	23 (10.3)	22 (9.7)	17 (11.6)	18 (12.2)
≥1.00	20 (8.9)	14 (6.2)	17 (11.6)	11 (7.4)

Table 2. Summary of the Primary End Point of 28-Day Mortality for All Participants and for Patients With MODS of More Than 9

	No./Total (%)		(95% CI)		
	Polymyxin-B Hemoperfusion	Sham	Risk Difference	Risk Ratio	P Value ^a
All Participants	84/223 (37.7)	78/226 (34.5)	3.15 (-5.73 to 12.04)	1.09 (0.85 to 1.39)	.49
>9 MODS ^b	65/146 (44.5)	65/148 (43.9)	0.60 (-10.75 to 11.97)	1.01 (0.78 to 1.31)	.92

^a P values were calculated by χ^2 and were unadjusted.

^b Multiple Organ Dysfunction Score (MODS)—measure of altered organ function in acutely ill patients using 6 organ systems with weighted scores (0, normal; 4, severe) of each organ system (MODS range, 0-24). A higher score is associated greater burden of organ dysfunction. A MODS of 9 to 12 points has

a hospital mortality of approximately 50%. Prior to the protocol amendment, the MODS score was calculated at baseline (time of randomization to the initiation of the study treatment). After the amendment, MODS of more than 9 was included at the time of screening, prior to randomization.

Table 3. Per-Protocol (Each Group Received 2 Treatments) 28-Day Mortality

Population	No./Total (%)		Difference, % (95% CI)	P Value ^a
	Polymyxin-B Hemoperfusion	Sham		
All participants	50/173 (28.9)	59/202 (29.2)	-0.3 (-9.5 to 8.9)	.94
>9 MODS	38/115 (33.0)	47/129 (36.4)	-3.1 (-15.2 to 9.0)	.58

Abbreviation: MODS, Multiple Organ Dysfunction Score.

^a P values calculated using χ^2 .

Among patients with septic shock and high endotoxin activity, polymyxin B hemoperfusion treatment plus conventional medical therapy compared with sham treatment plus conventional medical therapy did not reduce mortality at 28 days.

Dellinger RP, Bagshaw SM, Antonelli M, Foster DM, Klein DJ, Marshall JC, Palevsky PM, Weisberg LS, Schorr CA, Trzeciak S, Walker PM; EUPHRATES Trial Investigators. Effect of Targeted Polymyxin B Hemoperfusion on 28-Day Mortality in Patients With Septic Shock and Elevated Endotoxin Level: The EUPHRATES Randomized Clinical Trial. *JAMA*. 2018 Oct 9;320(14):1455-1463. doi: 10.1001/jama.2018.14618. PMID: 30304428; PMCID: PMC6233793.

CytoSorb® animal study



support the concept of chemokine gradient control of leukocyte trafficking and demonstrate the efficacy of apheresis to target this mechanism and reduce leukocyte infiltration into the lung

Peng ZY, Bishop JV, Wen XY, Elder MM, Zhou F, Chuasuwan A, Carter MJ, Devlin JE, Kaynar AM, Singbartl K, Pike F, Parker RS, Clermont G, Federspiel WJ, Kellum JA. Modulation of chemokine gradients by apheresis redirects leukocyte trafficking to different compartments during sepsis, studies in a rat model. Crit Care. 2014 Jul 3;18(4):R141. doi: 10.1186/cc13969. PMID: 24992991; PMCID: PMC4227131.

Treatment with an oXiris membrane can positively impact vasopressors' requirement but not influence SOFA score, procalcitonin or lactate levels, or mortality in septic shock patients.

Mielnicki, W.; Dyla, A.; Zajac, M.; Rokicka-Demitraszek, N.; Smereka, J. Does Continuous Renal Replacement Therapy with oXiris in Septic Shock Have Any Positive Impact? Single-Centre Experience with oXiris Therapy in Septic Shock Patients. *J. Clin. Med.* **2024**, *13*, 7527. <https://doi.org/10.3390/jcm13247527>

oXiris® during 109/01 – 114/03

- Oxiris 54 person-time (30 pt) in SHH during 109/01-114/03
 - clinic vasopressor requirement decrease
 - ICU stay days
 - 28 days mortality
 - AKD with RRT dependent
- CVVH 5300 person-time in SHH during 109/01-114/03

Conclusion



- 分析雙和醫院oXiris使用經驗，投稿期刊。