

**Survival Benefit of
TORAYMYXIN™,
Endotoxin Removal Therapy**

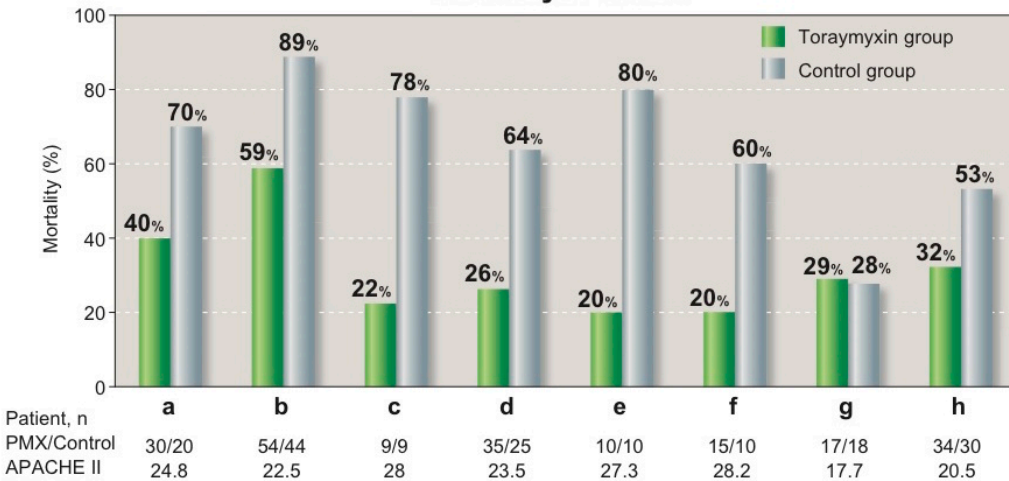


Extracorporeal Hemoperfusion Cartridge
TORAYMYXIN
PMX-20R

Eight RCTs of Toraymyxin therapy shows survival benefit for sepsis patients¹⁾

Meta-analysis of randomized control trials (RCTs) including various blood purification techniques demonstrated that these were no longer associated with lower mortality after excluding eight trials using Toraymyxin.

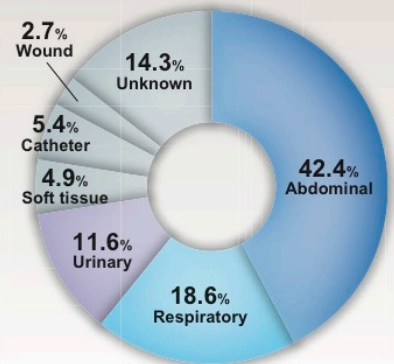
Mortality of 8 RCTs



Patient population of 8 RCTs

Ref.	Study	Diagnosis	Type of infection site	Gram negative bacteria infection	Endotoxin measurement
a	2 Nakamura 1999	Septic shock	Respiratory (46%), Urinary tract (20%), Abdominal (20%) etc.	Detected in all patient	Yes
b	3 Nemoto 2001	Sepsis, severe sepsis or septic shock	Abdominal (35%), Urinary tract (27%), Respiratory (14%), etc.	Gram negative infection or suspected	Yes
c	4 Nakamura 2002	Sepsis	Respiratory (44%), Wound (28%), Abdominal (17%) etc.	Detected in all patient	Yes
d	5 Nakamura-I 2003	Sepsis	Catheter (30%), Soft tissue (30%), respiratory (15%), Bone (15%), etc.	Detected partially	Yes
e	6 Nakamura-II 2003	Sepsis	Catheter (20%), Respiratory (20%), Soft tissue (20%), etc.	Detected partially	Yes
f	7 Nakamura 2004	Severe sepsis	Respiratory (60%), Urinary tract (28%), Abdominal (12%).	Detected in all patient	Yes
g	8 Vincent 2005	Severe sepsis or septic shock	Abdominal (100%)	Suspected	Yes
h	9 Cruz 2009	Severe sepsis or septic shock	Abdominal (100%)	Suspected	No

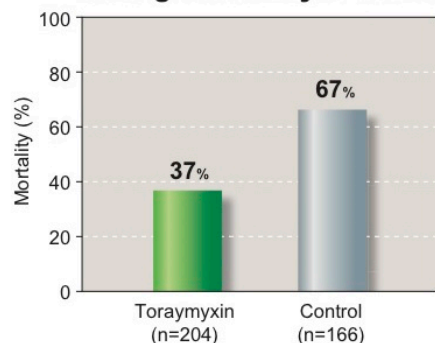
Types of infection site of the enrolled patients in 8 RCTs



EUPHAS study

Toraymyxin reduced the mortality risk by 30% compared to conventional treatment group in the 8 RCTs

Average mortality of 8 RCTs



Risk Ratio 0.57 [95%CI, 0.45, 0.72] (P<0.00001)¹⁾

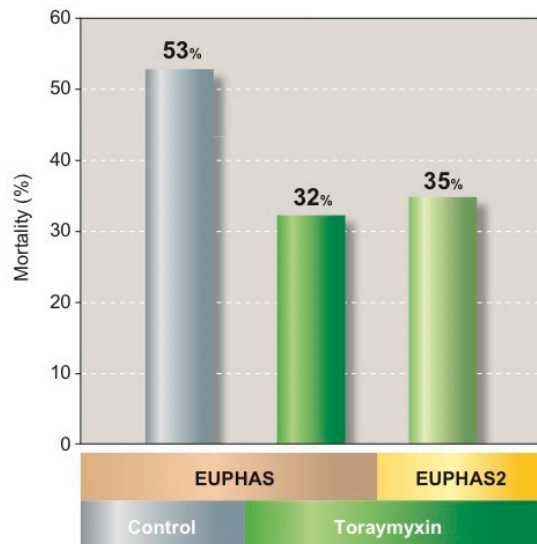
Absolute risk reduction 30%

NNT* 3.3

*The number needed to treat with Toraymyxin to save one life. One patient could be saved in 3.3 patients treated with Toraymyxin.

EUPHAS2 reproduced results of EUPHAS study (JAMA 2009)

EUPHAS2-a web based registry project¹⁰⁾



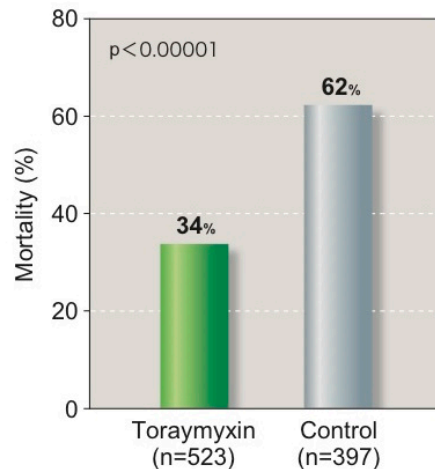
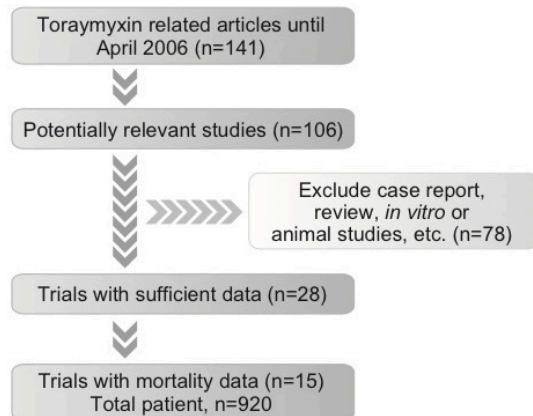
Baseline characteristics of patients and locations

	EUPHAS ⁹⁾		EUPHAS2 ¹⁰⁾
	Control	Toraymyxin	Toraymyxin
Patients, n	30	34	128
Type of infection site	Abdominal		Abdominal
APACHE II	20	21	21
Location of hospitals	10 in Italy		24 in Italy 7 in India

EUPHAS2 is a web-based data collection of patients treated with Toraymyxin retrospectively over the last 3 years, up to July 2013. The total number of the registration were 306; but only abdominal cases were selected for comparison.

Meta-analysis of 15 trials shows survival benefit of Toraymyxin¹¹⁾

Identification of eligible trials



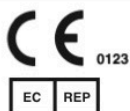
Toraymyxin therapy demonstrates survival benefit in patients with severe sepsis and septic shock

Sepsis registry study in Japan¹²⁾

- ▶ Observational (Cohort) study involving 47 critical care centers in Japan from October through December in 2007.
- ▶ Enrollment; Patients diagnosed with severe sepsis and septic shock.
- ▶ Patient population (n = 266)¹³⁾; Severe sepsis (n=121), Septic shock (n=145)
APACHE II = 20.3±9.9. Patients with PMX (n=43), without PMX (n= 223)
- ▶ Propensity score matching were preformed to adjust patients type, severity and treatments between patients with PMX and without PMX.
- ▶ **28-day mortality; Toraymyxin group (n=37), 37.8% , Control group (n=37), 67.6% p=0.019**

Reference ●

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