FACE study
(Fever and Antipyretic in Critical ill Evaluation study)
Fever was common in critically ill patients, occurred in 20–70% of patients requiring intensive care.

Antipyretic was frequently prescribed. The cost for it was $10,000 and $29,000 per one ICU with 18 beds.
Fever and Antipyretic in ICU

The study to assess the relationship between fever and mortality in non-neurological ICU.
24 papers

The study to assess the relationship between fever and mortality with antipyretic information.
0 paper

The randomized controlled trial to assess the impact of antipyretic on the mortality
2 papers
Fever and Antipyretic in ICU

Surgical ICU

RCT; Cooling

Aggressive vs permissive (cooling, if $38.5^\circ$C$>$) vs (no cooling)

Mortality

$2/18$ (11%) vs $3/20$ (15%)

($P=0.99$)

Arch Intern Med 2001;161:121-123
Fever and Antipyretic in ICU

Traumatic ICU

RCT; Cooling + Acetaminophen

Aggressive vs permissive
(if 38.5°C >) vs (if 40.0°C >)

Mortality

7/44 (16%) vs 1/38 (2.6%)

(P=0.06)

Surg infect (Larchmt) 2005;6:369-75
Fever and Antipyretic in ICU

- There are number of studies to assess the relationship between fever and mortality in non-neurological ICU.
- However, all of them did not have any information of antipyretic.
- There are two small, single center RCT, which suggested the potential risk of antipyretic.
- Large RCT might be ethically difficult.
FACE study (Fever and Antipyretic in Critical ill Evaluation study)

Study aim

To know

- How often fever is occurred in ICUs?
- Whether fever is associated with mortality?
- How often the antipyretic therapy is prescribed?
- Whether antipyretic is associated with mortality?
FACE study
(Fever and Antipyretic in Critical ill Evaluation study)

Study populations

- Adult non-neurological critically ill patients (20 years old or older)
- Requiring intensive care more than 48 hours

Study period: 3 months +
Follow up: 28 days
FACE study

Patients demographics
Age · sex · weight · reason for admission · APACHE II

Body temperature
Body temperature (every four hour) · Devices

Antipyretic
Type · dose · day and time

Steroids/extracorporeal circuit
Dose · day and time

Infection
Culture proven or suspicion

Patients outcome
28 days mortality · LOS in ICU · Kidney injury
FACE study

**Temperature indices**

- Max temperature (+0.5°C band analysis)
- Min temperature (+0.5°C band analysis)
- Body temperature when first antipyretic is prescribed (+0.5°C band analysis)
- Duration >38.0, 38.5, 39.0, 39.5 and 40.0°C
Antipyretic indices

- Whether antipyretic is used during ICU stay.

- The antipyretic strategy (dose, type etc) prescribe from first BT > 38.0°C to BT < 38.0°C

- The antipyretic strategy (dose, type etc) prescribe from Max BT to BT < 38.0°C.

(BT; Body temperature)
FACE study

Pilot study

- BT > 38.0 °C: about 50% of critically ill
- Antipyretic; prescribed for half of ICU patients
- ICU mortality; about 10%
Power calculation using pilot study

- Assuming 7% increase in ICU mortality with antipyretic, a power of 0.80, and an $\alpha$ level of 0.05, we require 1200 participants.

- Assuming 6% increase in ICU mortality with fever (BT $>$ 38.0°C), a power of 0.90, and an $\alpha$ level of 0.05, we require 1200 participants.
FACE study

IRB

- Feb 2009 Study have been approved.
- IRB is required in each participated site.
FACE study

Research meeting

- Jan, April and Sep in each year

  Collaboration research meeting

- Apr 2009; collaboration annual meeting

  (Fever in ICU)
FACE study bring us...

2. The process to get grant for research
3. Collaboration research frame in Japan and Korea
Research conference conducting 3/year
Collaboration research in Japan and Korea

It is happening.

FACE will start Sep 2009, and finish the end of 2009.