10. Respiratory Diseases (including Influenza and Rhinitis)

Reference

Nabeshima S, Kashiwagi K, Ajisaka K, et al. A randomized, controlled trial comparing traditional herbal medicine and neuraminidase inhibitors in the treatment of seasonal influenza. *Journal of Infection and Chemotherapy* 2012; 18: 534-43. Pubmed ID: 22350323

1. Objectives

To compare the efficacy of oseltamivir, zanamivir, and maoto (麻黄湯) in adult influenza patients.

2. Design

Randomized controlled trial (RCT).

3. Setting

One center: Outpatient Department, Fukuoka University Hospital, Japan.

4. Participants

Thirty-three outpatients examined between January and April 2009 who were rapid diagnostic test positive within 48 hours after onset of influenza symptoms (age range: 20–64 years).

5. Intervention

Participants were divided into three groups by computer randomization.
The only concomitant drug allowed was acetaminophen (400 mg), for high fever and headache.
Arm 1: TSUMURA Maoto (麻黄湯) Extract Granules group: 2.5 g t.i.d. for 5 days taken orally (n=11).
Arm 2: Oseltamivir group (2 type B patients): 75 g b.i.d. for 5 days taken orally (n=10).
Arm 3: Zanamivir group (2 type B patients): 20 mg b.i.d. for 5 days by inhalation (n=12).

6. Main outcome measures

The main endpoints were fever after commencement of treatment and period of symptom improvement. Other endpoints were viral persistence, safety, and serum levels of cytokines (IFN-α, IL-6, IL-8, IL-10, and TNF-α).

7. Main results

The data from 10 participants in arm 1, 8 in arm 2, and 10 in arm 3 were analyzed because there were dropouts. Participants recorded body temperature three times a day and symptoms for 5 days, then mailed the records to the hospital. The fever threshold was defined as 37.5°C. Fever duration was the time from drug administration till body temperature fell to 37.5°C or less. The period from onset to drug administration was 17 hours in arm 1, 22 hours in arm 2, and 26 hours in arm 3. Median fever duration was 29 hours in arm 1, 46 hours in arm 2, and 27 hours in arm 3, demonstrating a significant difference between arm 1 and arm 2 ($P<0.05$). There was no significant difference in persistence of symptoms among the three arms.

Viral tests and cytokine measurements were done on days 1 (the day of the examination), 3, and 5. The virus was a 2009 seasonal virus, its persistence in the body on days 1, 3, and 5, respectively, were 7/7, 3/7, and 1/7 in the maoto group, 6/6, 2/6, and 1/6 in the oseltamivir group, and 5/5, 3/5, and 1/5 in the zanamivir group. The surviving viruses were type A in the maoto group, and type B in the oseltamivir and zanamivir groups. There was no significant difference in cytokine levels among the three groups.

8. Conclusions

Maoto and neuraminidase inhibitors have similar effects on seasonal influenza viruses in healthy adults.

9. From Kampo medicine perspective

None.

10. Safety assessment in the article

One participant in the maoto group and one in the oseltamivir group had slightly raised levels of liver function enzyme, which normalized in two weeks.

11. Abstractor's comments

The paper clearly presents the design and results of the study and is thoroughly convincing in demonstrating no significant difference in fever and symptom duration between the maoto-only group and neuraminidase inhibitor groups. The paper is also interesting for its investigation of virus survival and cytokine levels, as well as its proposition of an antiviral action unrelated to cytokines.

12. Abstractor and date

Fujisawa M, 31 December 2013.