Tourniquet Test Positive, High Fever and a Pediatric Case of Swine Flu

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Swine flu is the present problem of the world. In the tropical countries, swine flu is still pandemic. The author hereby reports and discusses on a pediatric case of swine flu. The case is a 7 year-old boy (body weight 28 kg) presenting to the primary care center in Bangkok, Thailand with the complaint of high fever, non productive cough, nausea, vomiting and malaise. His body temperature was 39.2 °C. His throat was red and lung clear. The attending physician performed tourniquet test and got positive result. The boy was referred to the hospital for further proper management. At the hospital, complete blood count was done and no thrombocytopenia could be detected. In this case, the finalized diagnosis as swine flu was derived. The Real time PCR test was done to confirm new H1N1 influenza virus infection (confirmation was performed at Thai Department of Medical Science). During hospitalization, investigations done to rule out co-existing dengue fever or other infections included hemoculture, dengue serological study (paired serum test) and Chikungunya serological study (results of all tests were negative). Chest X ray was also done in this case and there was no lung involvement. This case was treated by antiviral drug (Oseltamivir 60 mg twice daily) and got full recovery within 10 days. Of interest, high fever and flu like symptoms are non significant and several tropical diseases can have this presentation. In Thailand, dengue infection is common and tourniquet test is helpful in screening and diagnosis[1]. Indeed, the important differential diagnoses for positive tourniquet test include dengue hemorrhagic fever and some other viral hemorrhagic fever (such as Rocky mountain spotted fever and Chikungunya fever)[2,3]. In this case, positive tourniquet test could be seen in a case of swine flu, which is not a viral hemorrhagic disease. This observation could be due to the fragile nature of the child or the exact undisclosed pathological process of the new influenza virus infection. The possible mechanism causing tourniquet positive might be due to swine flu induced thrombocytopenia. This requires further study for clarification. Indeed, there is no similar case in the literature. For the tropical doctors in the endemic areas of dengue, it is necessary to think of swine flu in positive tourniquet test case in the present situation of pandemic swine flu[4].

Key words: H1N1 Virus; hemorrhagic fever; Tourniquets

References

Comparison of Effect and Side Effects of Acetaminophen and Ibuprofen in Treatment of Febrile Children

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Fever is a common pediatric problem accounting for 25-30% of emergency department and clinic visits each year. Although it usually indicates minor infection, it can also be a sign of serious life-threatening disease.

Acetaminophen is usually mentioned as the medication of choice, while ibuprofen is also recommended to be given for high-temperature fevers[1]. However, due to the potential side
effects of these medicines, the use of antipyretics for the management of pediatric fever remains controversial[2].

In a meta-analysis of all studies in which single-dose acetaminophen or ibuprofen were measured in a randomly blinded way in children, was concluded that ibuprofen was a more effective antipyretic than acetaminophen. There was no difference in safety between the two drugs or among these two and placebo. The recommendations in the recent literature varied between the “very safe” acetaminophen to the “slightly more effective” ibuprofen, yet answering a parent’s question about which drug is “better” was difficult. Single doses were compared over a period of three to 12 hours. There was less consistency in both number and nature of outcome measures[3].

A randomized, double-blind and case-controlled clinical trial study, was performed on 100 children between six months to 12 years of age admitted in Imam Sajjad Hospital Yasuj, southwest Iran, with fever of non-serious origin. Patients were randomized equally into two groups to receive either orally 10 mg/kg acetaminophen (Case Group) or 10 mg/kg ibuprofen (Control Group). Tympanic temperatures were recorded at baseline and subsequently at 0.5, 1, 2, 3 and 4 hours from baseline. The patients were observed for 24 hrs.

Information on adverse events was collected. Normal temperature was defined as a tympanic measurement ranging between 36.5°C and 37.9°C [4]. A total of 100 patients were randomly assigned, 50 in the acetaminophen group, 50 in the ibuprofen group. Patients with severe systemic disease were excluded. Study groups were similar in age and gender. The mean temperature change from baseline after four hours was -1.46°C and -1.59°C in ibuprofen and acetaminophen groups respectively.

Acetaminophen lowered the average baseline body temperature from 38.75°C to 37.16°C after four hours treatment. Ibuprofen lowered the average baseline body temperature from 38°C to a mean temperature of 36.54°C. The mean temperature change from baseline after four hours was -1.59°C and -1.46°C in acetaminophen and ibuprofen groups respectively. It was found that in intervals of 0.5, 1, 2, 3 and 4 hours, acetaminophen has reduced 0.25, 1.06, 1.37, 1.49 and 1.59°C and ibuprofen 0.21, 0.64, 0.94, 1.04 and 1.46°C of patients’ body temperature.

The main adverse events after excluding those not related to treatment were vomiting in 11 patients (22%) and 1 (2%), diarrhea in 5 (10%) and nil, abdominal pain in 3 (6%) and nil in the ibuprofen and acetaminophen groups respectively.

In this study temperature evolution over the 4 hours of treatment was not significantly different between the two groups (95% CI; -1.03 to 0.44). Acetaminophen, compared with ibuprofen, produced a greater body temperature reduction at 1, 2, 3 hours after intervention (maximum 0.81 after the first hour; ) \( P<0.01 \).

Rainsford et al and Goldman compared the two drug in two large studies: one found no difference[5] and in the other ibuprofen was more effective than acetaminophen[6].

Our study showed that patients who were given ibuprofen had more side effects such as diarrhea, vomiting or abdominal pain (statistically significant differences). It should be noted that several studies show that tolerability was similar in both drugs. Rainsford et al concluded that both drugs are remarkably safe as used in clinical trials[5].

Our results demonstrated that ibuprofen is a suitable alternative to acetaminophen for reducing temperature effectively but acetaminophen is significantly better tolerated.

**Key words:** Acetaminophen; Ibuprofen; Fever; Children

**References**