CONCURRENT DENGUE HEMORRHAGIC FEVER AND TYPHOID FEVER INFECTION IN ADULT : CASE REPORT

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Abstract. In Indonesia as well as in many developing countries both typhoid fever and dengue hemorrhagic fever (DHF) are still endemic and prevalent. In Indonesia the insidence of DHF in 1994 was 9.72/100,000 population with CFR of 2.5% and each year about 640,000 - 1,500,000 cases of typhoid fever were reported with mortality of 1.6 - 3%. The concurrent infection of both diseases may occur in one patient.

We report 2 cases of such concurrent infections:

Case 1. Female, 19 years old who was under treatment for herpes zoster virus infection admitted to the hospital due to abrupt onset of fever since 3 days, the following day bleeding was noted and DHF was suspected as a working diagnosis. Laboratory examination such as IgG dengue, IgM dengue and 4-fold rise of dengue titer confirmed the above diagnosis.

Fever was still documented after day 8 and tended to rise, the patient complained for headache but there was no such evidence of cerebral hemorrhage. Typhoid fever was suspected and blood culture was taken. It was positive for *Salmonella typhi.*

Case2. Male 32 years old, physician was admitted to the hospital due to 5 days of sudden onset of high fever and torniquet test positive. Diagnosis of DHF was suspected, and diagnosis confirmed by IgM dengue positive and 4-fold rise of dengue titer. On day 8 there was intestinal bleeding and the body temperature was still high also on the following day. Blood culture was taken and the result was positive for *Salmonella typhi.*

Both of our patients were treated with fluoroquinolone and recovered. In the endemic area concurrent infection of DHF and typhoid fever should be considered especially when DHF patients are still febrile beyond day 7.

Typhoid fever and also dengue hemorrhagic fever (DHF) remain as important public health problems for many developing countries. Both diseases are endemic and the cases are prevalent all year long.

In Indonesia each year about 640,000 - 1,500,000 cases of typhoid fever are reported annually with a mortality rate of 1.6 - 3.0% (Simanjuntak, 1993) and the incidence of dengue hemorrhagic fever in 1994 was 9.72/100,000 population with a case fatality rate (CFR) of 2.5% (Ministry of Health, 1996). Since both disease are endemic in Indonesia so it is not impossible to occur at the time in one patients. We report 2 cases of concurrent typhoid fever and DHF infection.

Case 1: A 19 years old female, student who was under treatment for herpes zoster virus infection with acyclovir was referred to the hospital due to abrupt onset of high fever. The patient complained of high fever since 3 days before admission with chill, headache, myalgia, nausea, anorexia and epigastric pain.

On admission she looked moderately ill, compos mentis, the body temperature was 40.1°C, blood pressure 110/75 mmHg and her pulse was 100/minute, the liver was slightly enlarged and tender and bullae was observed on the abdominal right lower quadrant.

The next day bleeding was observed per vaginam and DHF grade II was suspected. To confirm the diagnosis we performed several examinations and the laboratory profile was as follows : hemoglobin 11.6 g%, white blood count 5,600/mm^3, thrombocyte count 123,000/mm^3 and PCV 34%. IgG dengue and IgM dengue were positive and the dengue titer was 4-fold rise. The diagnosis of dengue hemorrhagic fever was confirmed. The patients was treated with acylovir, paracetamol and Ringer lactate solution.

High body temperature was still documented on

day 8 and beyond it tended to rise and varied between 38.5 - 40.5°C, we performed another examination to seek another possible infection including blood culture. Blood cultures were positive for *Salmonella typhi* and we added pefloxacin to the treatment.

The patient condition improved, the body temperature was lowered to normal and after 19 days of hospitalization was sent home. The diagnosis was DHF grade II, typhoid fever and herpes zoster virus infection.

Case 2: A physician, male aged 32 years was admitted to the hospital due to 5 days sudden onset fever. He also complained myalgia, headache and upper gastrointestinal tract upset, nausea but not vomiting. On admission he looked moderately ill, compos mentis, the body temperature was 38.3°C, blood pressure 105/75 mmHg and pulse rate was 98/minute. Both liver and spleen were enlarged. The torniquet test was positive and we suspected the diagnosis of DHF.

The laboratory profile were hemoglobin 18.2 g%, PCV 54%, WBC 5,200/mm^3 and platelets count was 73,000/mm^3. IgG dengue was negative but IgM dengue was positive, and the dengue titer reflected a primary response.

Ringer lactate solution, paracetamol and vitamins were given, the laboratory profile was improved on the follow up.

On day 8 intestinal bleeding was observed and the temperature was still above 38°C. This body temperature was still high also on the following day. We suspected typhoid fever and blood cultures were performed and were positive for *Salmonella typhi.* Ciprofloxacin was administered and recovery was achieved. The diagnosis of this patients were dengue hemorrhagic fever and typhoid fever with intestinal bleeding complication.

In Indonesia both typhoid fever and DHF are endemic. In Bandung, the capital of West Java Province, the prevalence of DHF in 1995 was 11/100,000 population with a CFR of 1.70% and typhoid fever was ranked 2 among hospitalized patients (West Java Health Profile, 1996).

WHO established diagnostic criteria for DHF (1986) and these criteria were adapted in Indonesia with a little modification in thrombocyte count (Ministry of Health, Republic of Indonesia , 1992).

Both of our patients were admitted to the hospital due to sudden onset of high fever (three and five days), myalgia and gastrointestinal disturbances. Physical examinations showed evidence of bleeding (vaginal bleeding in the first case and positive torniquet test in the second one) and hepatomegaly. Hemoconcentration and severe thrombocytopenia were only marked in case 2, although trombocytopenia also occurred in case 1.

According to WHO criteria (1986) only case 2 was suspected DHF but on using the Indonesian modification both cases were DHF.

Many laboratory methods are available to diagnose dengue infection (Tan *et al,* 1994) beside hemagglutination inhibition test also today available in the market IgG and IgM Dengue blot kit (Figuiredo *et al,* 1989). In our patients the HI test gave a 4-fold rise, IgM dengue was positive in both, IgG in the second case. The diagnosis of DHF was confirmed on both cases.

According to WHO criteria the fever in DHF lasts range from 2 to 7 days. In our cases fever was observed far beyond day 8 of illness. There was thus a possibility of another infection.

Although the incubation period of typhoid fever varies between 3 - 56 days, the average is 10 to 20 days (Mandal, 1996). We believe that both diseases occured in the same time. The incidence of typhoid fever is high in Indonesia, this disease is always in our top list of differential diagnosis of fever of more than a week. In these cases typhoid fever were suspected and the diagnosis were confirmed by positive cultures.

Both patients were treated with fluoroquinolone, because of thrombocytopenia, although our usual drug of choice is still chloramphenicol. We have good experience in using fluoroquinolone in typhoid fever patients (Nellwan *et al,* 1994; Sudjana *et al,* 1996) and in some countries this is a drug of choice (Mandal, 1992).

To our knowledge this is the first concurrent DHF and typhoid fever infection reported.

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