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STRATEGY TO REDUCE MORTALITY IN DENGUE HEMORRHAGIC FEVER

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Dengue fever (DF) and dengue hemorrhagic fever (DHF) are the main clinical types of dengue infection. DF runs a benign course while DHF potentially can cause dengue shock and death. Presence of a critical phase with the pathological hallmark of plasma leakage in DHF is the fundamental difference between DF and DHF. Reduction of mortality in DHF resides in the early diagnosis of dengue infection, early detection of plasma leakage and accurate fluid management during the critical phase designed to prevent both shock and fluid overload. Given the predictable stereotyped course of DHF with a febrile phase lasting 4-7 days, a critical phase lasting only 48 hours and transition to convalescence around the 7th day of illness provides a window of opportunity for optimal fluid therapy to reduce mortality. Plasma leakage commences from 3rd to 5th day of the illness. Hence, it is essential to diagnose dengue infection within the first three days; blanching erythema been useful sign. Monitoring of physiological parameters compensating for volume depletion in the face of plasma leakage permits early detection of plasma leakage. Severe vomiting, abdominal pain and tender hepatomegaly portend the advent of plasma leakage which should be confirmed early by ultrasonography before clinical evidence of ascites and pleural effusion. A calculated fluid quota of M+5% is administered over the 48 hour period of the critical phase. Fluid infusion should match the dynamics of plasma leakage enabled by hourly monitoring of pulse rate, pulse pressure, urine output, and hematocrit. Too much of fluid in the setting of leaky capillaries will result in fluid overload while too little results in shock and consequently fatal hemorrhages and organ failure triggered by tissue hypoxia. Striking the right balance in fluid therapy is the art mastered by good understanding of the disease course and application of basic cardiac physiology. I shall share the details of this art based on experience in treating over 4000 dengue patients with only one death during the guest lecture.

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