Conclusions

According to the research conducted and data collected (table 1 and figure 1) from 47 patients, the mostly affected age groups of tuberculosis patients in Sri Lanka from 15.03.2022 to 20.03.2023 are 51–60 (29.79 %), 41–50 (23.40 %) and 61–70 (14.89 %).

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MANAGEMENT OF DENGUE HEMORRHAGIC FEVER IN SRI LANKA

Introduction

Tropical island Sri Lanka, with largest outbreak of dengue in 2017 with 186,101 reported hospitalizations has a unique topography and seasonal monsoon cycles that influences epidemic and transmission the dynamics of dengue. In 2021, about 41,000 confirmed cases of dengue fever have already been registered, this exceeds the number of cases for the whole of last year.

Dengue fever is an acute transmissible viral disease. The viruses that cause dengue fever belong to arboviruses, Flaviviridae family of genus Flavivirus. Dengue is vector born, spread primarily by mosquito Aedes aegypti, it become infectious after a blood meal from an infected host and is able to transmit the acquired DENV [7]. Aedes can breed in both clean and organically rich stagnant waters and are primarily considered as contain breeders. Most patients remain asymptomatic while others acquire a febrile illness after an incubation period of 3 to14 days which may progress into Undifferentiated febrile illness, Dengue fever, Dengue hemorrhagic fever, Expanded dengue syndrome [6]. Most people with dengue fever have a mild form of the disease, but about 15 % of people admitted to hospitals develop hemorrhagic dengue fever, which causes severe bleeding and can lead to death. Hospital admission is carried out only for selected category of patients. It is impossible to predict in the early stages of infection whether someone will develop a severe form of dengue, which means that people should visit the hospital daily for blood tests to detect signs as early as possible. This is a huge burden on the healthcare system.

Main principle of treatment of dengue hemorrhagic treatment is fluid management by monitoring of infusion rates and urine output, thereby Sri Lanka was able to lower the mortality rate by 67.45 % from 2019 to 2022 [2].

Goal

To study the management of dengue hemorrhagic fever in a low socioeconomic country – Sri Lanka, highlighting the significance of early detection and fluid balance in critical phase.

Material and Methods of research

Clinical assessment of infected dengue patients in National Hospital Sri Lanka and analysis of medical, scientific literature on this topic and national guidelines on management of dengue.

The results of the research and their discussion

Dengue hemorrhagic fever is characterized by 3 stages of Febrile, Critical and Convalescent phase. Insufficient facilities in government medical sector limits hospital admission to patients with a platelet count of < 100,000/mm^3 and those exhibiting warning signs after 3 days of fever: abdominal pain, persistent vomiting, clinical signs of fluid accumulation by means of pleural effusion and ascites, mucosal bleeding, hepatomegaly, increased hematocrit with decrease in platelet [6].

Febrile phase exhibits high fever, headache, retro-orbital pain, arthralgia, myalgia, nausea, vomiting, petechiae and diffuse, erythematous or macular skin rash. These features are indistinguishable between dengue fever and dengue hemorrhagic fever. Prescence of tender hepatomegaly favor the diagnosis of dengue hemorrhagic fever. Fluid administration both oral and IV is limited to 2500 ml for 24 hr for an average adult or 2 ml/kg/hour up to 50 kg unless patient has vomiting or diarrhea. IV fluids are indicated for patients with diarrhea, vomiting and those who are unable to take adequate oral fluids. Fever is managed by antipyretics, avoiding non-steroidal anti-inflammatory drugs that worsen bleeding [1, 6].

Critical phase lasts 24 to 48 hours, progressive plasma leakage is the hallmark of this phase and may lead to hypovolemic shock, bleeding, organ failure and death. Main factor for fluid therapy in Dengue hemorrhagic fever is identifying the beginning and predicting the end of critical phase. Patient has entered critical phase when hematocrit rise by 20 %, fluid leakage confirmed radiographically, serum albumin < 3.5 g/dl, non-fasting serum cholesterol <100 mg/dl. Total amount of fluid administered, both oral and IV for the entire critical phase is maintenance + 5 % deficit over 48 hours in a hemodynamically stable patient by means of IV normal saline or Hartmann's solution. Maintenance is calculated as100 ml/kg for the 1st 10 kg+50 ml/kg for the 2nd 10 kg+20 ml/kg from 20 kg up to 50 kg, 5 % deficit is 50 ml/kg up to 50 kg. Thereby, the maximum fluid requirement for the entire critical phase for an average adult is 4600 ml. Rate of infusion is not uniform it is increased and decreased in a stepwise pattern similar to the dynamics of leakage. Oral electrolyte solutions include king coconut water, fruit juices, oral rehydration fluids and kanji, limiting the intake of plain water. The rate at which fluid is administered during the critical phase is indicated in figure 1.

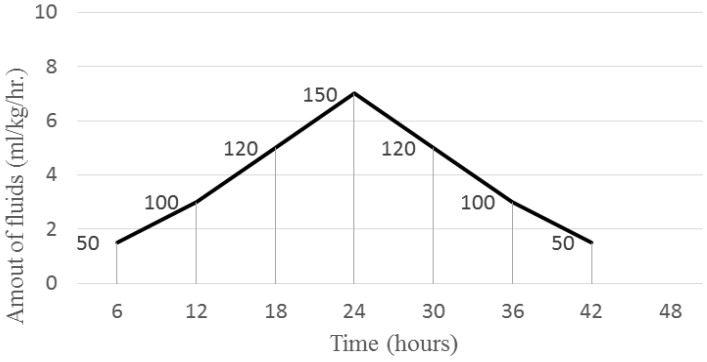

Figure 1 – Guide to rate of fluid intake in critical phase

Urine output is maintained at 0,5–1 ml/kg/hour and pulse pressure at around 30 mmHg during the entire critical phase. Urine output of >1ml/kg/hour, generalized or facial edema is suggestive of high infusion rates and < 0.5 ml/kg/hour urine output indicate inadequate fluids. Hourly monitoring of vital parameters, fluid balance chart and HCT every 3 hours, temperature every 4 hours and FBC twice daily is required [6].

Convalescent phase/recovery phase lasts 2 to 5 days with reabsorption of extravasated fluid. Patient show signs of improved general weakness, convalescent rash, generalized itching, bradycardia, diuresis, stabilized hematocrit, rise of white cell count along with a rise in platelet count [6].

Prevention is aimed at regular removal of mosquito breeding sites, minimizes exposure to mosquitos by clothes, repellents, nets and patient education on management and early recognition [4]. Breeding mosquitos carrying *Wolbachia* bacteria that prevents transmitting dengue to humans were introduced as a new way of fighting dengue in march 2020 [3]. However, there is an increase of dengue cases by 35.81 % from 2020–2022 [7]. DENGAVAXIA is not registered in Sri Lanka as of 2023 and the country will undergo upcoming phase 3 clinical trials for TAKEDA dengue vaccine [8]. Takeda's tetravalent dengue vaccine candidate (TAK-003) is based on a live-attenuated dengue serotype 2 virus, which provides the genetic "backbone" for all four vaccine viruses. The trial is taking place at sites in dengue-endemic areas in Latin America (Brazil, Colombia, Panama, the Dominican Republic and Nicaragua) and Asia (Philippines, Thailand and Sri Lanka) where there are unmet needs in dengue prevention and where severe dengue is a leading cause of serious illness and death among children [9].

Conclusions

There is a significant decrease in the mortality rate from 2019 with the updated methodology of treatment focusing on fluid management and intense monitoring of vital signs. Hospital facilities, proper prevention methods and vaccination has to be improved with adequate financial support from the government.

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EFFECT OF REMDESIVIR ON THE CLINICAL COURSE OF COVID-19 IN PATIENTS WITH VARIOUS COMORBIDITY

Introduction

The WHO recommends against the use of remdesivir (RDV) [1] for all patients with COVID-19, based primarily on the results of the SOLIDARITY trial, which failed to demonstrate a reduction in hospital length of stay or mortality [2].