Hemolytic uremic syndrome – emergency in an infant

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Background:

Hemolytic-uremic syndrome (HUS) is a serious condition characterized by hemolytic anemia, thrombocytopenia, and acute kidney failure. The most common cause of HUS in children is infection with Shiga toxin-producing E. coli (STEC).

Case presentation:

An 8-month-old female infant presented to the emergency department due to vomiting that started earlier in the day. Since she was stable and her hemoglobin level and platelet count were normal, she was released home. On a follow-up examination after 36 hours, the hemoglobin level had dropped to 48 g/L and the platelet count to $28x10^9$/L. Elevated levels of urea 18.4 mmol/L and creatinine 64 µmol/L suggested kidney injury. On admission, she was tachycardic and hypertensive, with diffuse petechiae on the skin and mucous membranes. Hematuria was observed through a urinary catheter. Schistocytes were found in her peripheral blood smear, raising suspicion of HUS. E. coli O26 was detected in the stool sample, even though there was no bloody diarrhea. Over the following 3 weeks, she received erythrocyte concentrate 4 times, was rehydrated parenterally, and 1.25 mg of amlodipine was initiated for hypertension. Since diuresis was maintained, there was no need for dialysis. Despite the platelet count dropping to an extremely low level of $5x10^9$/L, platelet replacement was not administered. Once the levels of hemoglobin, platelets, and renal function markers reached normal values, the infant was discharged with a follow-up appointment in 2 weeks and instructions to avoid meat, vegetables, and dairy products of unknown origin.

Conclusion:

HUS is an extremely dangerous condition that can progress rapidly. Early initiation of adequate rehydration is crucial to prevent kidney failure. Although the thrombocytopenia can be dramatic, platelet concentrates should be administered only in cases of active bleeding or planned surgical procedures.

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