

Patient A (Male, 1-year old)

On May 18th, the patient initially exhibited cold symptoms without fever and was given Compound Paracetamol and Methylephedrine Oral Liquid (CPMOL), an oral solution containing a combination of acetaminophen, dextromethorphan hydrobromide, chlorpheniramine maleate, pseudoephedrine hydrochloride, guaifenesin, riboflavin sodium phosphate, and anhydrous caffeine (Figure S1). After 36 hours, severe diarrhea began (passing yellow-green watery stools with mucus and a small amount of blood, accompanied by abdominal pain, without tenesmus) at a frequency of more than 10 times a day. After 40 hours, the patient developed a high fever of 40.5°C with chills and shivering. On May 20th at noon, the patient was given "Xiao'er An'erning" granules with no significant improvement. By May 21st, the cold symptoms worsened, with a persistent high fever of 40.5°C, throat congestion, swollen tonsils, and coarse breath sounds in both lungs. Chest X-ray showed increased lung markings with patchy shadows, and an abdominal X-ray indicated scattered small fluid levels in the small and large intestines, suggesting inflammatory changes.

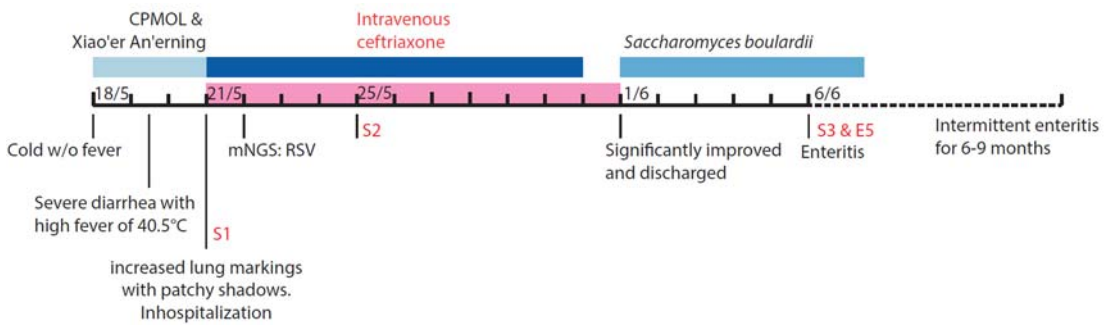


Figure S1. Disease course for Patient A

Diagnosed with enteritis and acute bronchitis, the patient was admitted to the hospital with a peak diarrhea frequency of once every half hour, minimal volume, and bowel sounds 8 times per minute. Treated with intravenous ceftriaxone (50 mg/kg daily) for infection and symptomatic treatment for gastrointestinal regulation. On May 22nd, an upper respiratory tract pathogen NGS test detected Human respiratory syncytial virus A (sequence count 89171) and fecal culture showed carbapenem-resistant *Salmonella*. Abnormal lab results included elevated hypersensitive C-reactive protein (hs-CRP) at 47.62 mg/L, lymphocyte percentage (LYMPH%) at 41.3%, decreased platelet count (PLT) at $168 \times 10^9/L$, serum potassium at 3.68 mmol/L, inorganic phosphate (P) at 1.27 mmol/L, elevated β 2-microglobulin (β 2-MG) at 3.30 mg/L, positive fecal occult blood test, and fecal routine WBC at 1+. After 9 days, the respiratory infection significantly improved, and the patient was discharged. The patient continued taking probiotics (*Saccharomyces boulardii*) for two weeks. On June 6th, during a follow-up for enteritis, fecal culture again showed carbapenem-resistant *Salmonella* and carbapenem-resistant *Escherichia coli*, with ongoing clinical symptoms of enteritis. No fecal cultures were sent intermittently for six months. Six-month and nine-month follow-ups did not detect *Salmonella*, but occasional rectal bleeding persisted.

Patient B (Male, 2-year old)

On July 1st, the patient initially showed cold symptoms with a high fever, which could not be reduced to normal with medication (Figure S2). On July 6th, the high fever was partially reduced to around 38°C with medication, with a fever interval of 2-3 hours. The patient was treated with cefaclor, Xiao'er Pneumonia Relief Granules (ephedra, bitter almond, gypsum, licorice, honeysuckle, forsythia, anemarrhena, scutellaria, isatis root, ophiopogon, and houttuynia), Itanting (containing ambroxol hydrochloride and clenbuterol hydrochloride), cefmetazole sodium (IM), and Compound Zinc Granules. On July 9th, diarrhea began, characterized by watery stools with some mucus and a slight foul smell, without blood, at about 3 times a day with moderate volume. By July 10th, the frequency increased to 5-6 times a day, still watery stools with mucus, without blood, and with high fever primarily at night. On July 11th, symptoms included fever, vomiting, loose stools with mucus and pus, blood-streaked stools, periumbilical pain exacerbated by eating, and active bowel sounds (about 8 times per minute). The patient was given a single injection of ceftriaxone (0.5g/day), cefdinir (0.05g 3 times/day for 3 days), and ketotifen tablets (0.5mg, 2 times/day for 4 days).

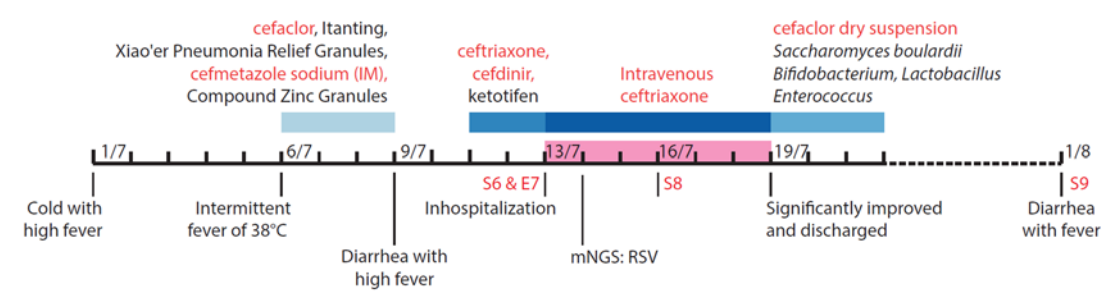


Figure S2. Disease course for Patient B

On July 13th, with no significant improvement, the patient was hospitalized with a diagnosis of pediatric enteritis and bronchitis. Chest X-ray showed bronchitis with throat congestion and coarse breath sounds in both lungs. Abdominal X-ray indicated slight gas-liquid levels in the colon, with slight gas accumulation and dilation. An upper respiratory tract pathogen NGS test detected Human respiratory syncytial virus A (sequence count 587), with abnormal lab results including serum amyloid A (SAA) at 50.98 mg/L, white blood cell count (WBC) at $12.97 \times 10^9/L$, lymphocyte percentage (LYMPH%) at 43.2%, erythrocyte sedimentation rate (ESR) at 29 mm/h, inorganic phosphate (P) at 1.19 mmol/L, procalcitonin (PCT) at 0.27 ng/ml, triglycerides (TG) at 2.43 mmol/L, high-density lipoprotein cholesterol (HDL-C) at 0.57 mmol/L, apolipoprotein A1 (apoA1) at 0.72 g/L, apolipoprotein B (apoB100) at 1.25 g/L, alpha-hydroxybutyrate dehydrogenase (α -HBDH) at 281 U/L, creatine kinase-MB (CK-MB) at 27 U/L, lactate dehydrogenase (LDH) at 452 U/L, indicating abnormal lipid metabolism and myocardial function damage. Continued treatment included ceftriaxone (50 mg/kg ivd QD) for infection and symptomatic treatment for gastrointestinal regulation. Fecal cultures on July 15th and 18th both detected carbapenem-resistant *Salmonella* and carbapenem-resistant *Escherichia coli* (2+). After 6 days in the hospital, the respiratory infection significantly improved, and the patient was discharged with medication for 3 days (cefaclor dry suspension 0.125g PO TID; *Saccharomyces boulardii* 0.25g once daily; *Bifidobacterium*, *Lactobacillus*, and *Enterococcus* live capsules 1.0g PO BID). Enteritis symptoms and CRSM detection persisted until August 1st, with no further fecal cultures sent, and the condition remained unclear. A 4-month follow-up did not detect *Salmonella*, and no rectal bleeding was observed.