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Research Paper | Medicine Science

A rare case: Typhoid fever with ARDS

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ABSTRACT

We reported a case of a young male patient with typhoid fever whose clinical course was complicated by hypotension, enteritis , leucopenia, thrombocytopenia, coagulopathy and sepsis with acute respiratory distress syndrome (ARDS). He recovered with prompt mechanical ventilatory support ,blood transfusion ,fluid resuscitation. ARDS in typhoid fever has generally proved to be fatal in reported cases.

KEYWORDS: Adult respiratory distress syndrome(ARDS), S.typhi,Salmonella typhi. HRCT-high resolution computed tomography,AST-aspartate aminotransferase

Case report

ARDS is a rare pulmonary complication associated with typhoid fever. A 30 yr old male patient was initially admitted in medicine general ward with complaints of low grade fever (38oC) on & off since 4 wks .diarrhoea ,nausea, vomiting ,,hemoptysis ,jaundice,spleenomegaly , confusion since 1wk after hospitalization. progressive dyspnoea.patient was transferred to ICU because of respiratory distress . In ICU he developed anaemia ,leucopenia ,thrombocytopenia,bleeding at venipuncture sites .He developed severe respiratory distress .patient was endotracheally intubated & put on mechanical ventilator support .Muscle paralytic agents were given .Three wks before admission to the ICU, he had history of travelling about 6-7 days . ABG revealed PH 7.44,Pco2 45 mmHg ,Po2 50mmHg withFIO2 1.0. PEEP 10. ABG revealed refractory hypoxia suggestive of ARDS (PaO2 /FiO2 ratio was <200).

PT was 18 sec ,PTT -78,widal test was positive in high titre. blood culture & stool culture for salmonella typhi was positive . Creatine kinase was 2103 u/l. Iv ciprofloxacin 500 mg for 5 days was given .Diarrhoea resolved after 4 days of bowel rest , antibiotic therapy & fluid resuscitation.Bilirubin decreased from 6.4 mg /dl which was on admission to ICU to 2 .0 mg/dl On the day of discharge.

--AST was 150u /l on admission(normal 4-28)&25u/l three days before discharge.Alkaline phosphatase was105u/l on admission & increased to 208u/l on discharge.Serum amylase was 150u/l to 245u/l over the week in ICU but was normal on discharge .At the discharge, stool culture becomes negative after 72 hrs ,low grade fever 38 oc continued till the time of discharge from the ICU15 days after admission. BP was within normal limits,heart rate was 100 to120/min. on respiratory system examination crackles all over lung fields more on right side mucopurulent secretions were suctioned from endotracheal tube .chest x ray showed bilateral extensive ,nonhmogenous opacities fluffy shadows in four quandrants . Chest x ray revealed bilateral extensive air space consolidation & HRCT revealed same with ground glass opacities bilaterally. Initially blood gas analysis showed PH 7.34,Pco2 53,Po2 85-with minute ventilation 12 l/min ,FIO2 0.9,positive PEEP 10 cm H2o.

On cardiovascular system examination heart sounds were normal, there was no gallop ,murmur,pericardial rub .2D Echo normal ,cardiac index 3.7 l/min/m2.after 1 day of increased mechanical ventilation ,dobutamine 5ug/kg/min, muscle paralytic with pancuronium & diuresis with furosemide.

ABG revealed PH 7.44,Pco245 mmHg ,Po2 90mmHg with minute ventilation 12 l/min Fio2 ,0.5,PEEP 7 cmofH2O.

Pt wean off from the m.ventilator after 8 days .FOB showed no abnormalities.Tracheobronchial secretions negative for microbiological agents .platelate count increased from 20 x10 9.to200 x10 9/l. WBCs count increased from 3.0 x109/l to5.0x109/l (p-59% ,L-36 & E-4% M-2%) Differential normal on discharge from ICU. Prothrombin time ,Partial thromboplastin time was initially elevated 19sec &74sec respectively,Thrombin time 7.2sec,serum fibrinogen 250mg/dl.D-dimer2.1mg/l .This suggest disseminated intravascular coagulopathy

The clinical coagulopathy resolved within 3 days of replacement therapy. Cardiovascular work up ECG ,2D echo was normal .

He required mechanical ventilation with low tidal volume (4ml /kg /B.W)PEEP & Prone positioning ,vassopressors ,antibiotics ,negative fluid balance & blood products transfusion. Gradually we started weaning off from the mechanical ventilation ,decreased PEEP ,decreased FiO2. & vassopressor support

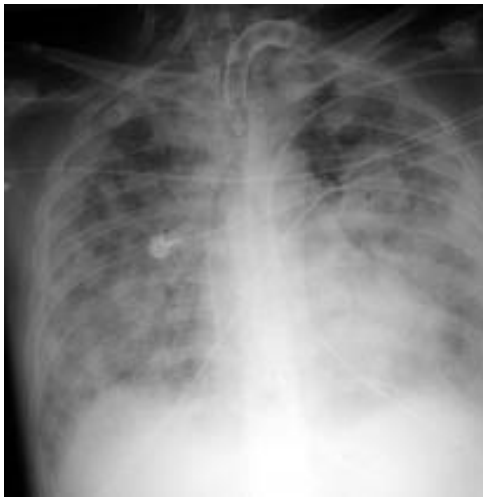

FIG1 SHOWS CHEST XRAY AP VIEW FEATURES OF ARDS

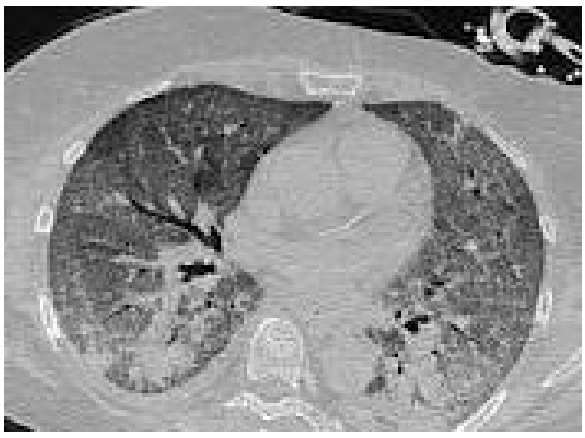

FIG2 HRCT THORAX SHOWING FEATURES OF ARDS

Discussion

Patient was presented with clinical features of typhoid fever like diarrhoea, enteritis, hepatic involvement,pancreatic involvement, splenomegaly, increased creatinine kinase,anaemia,leucopenia,throm bocytopenia & coagulopathy.1,2

Pulmonary involvement consists of featuresof acute respiratory distress syndrome .this patient had severe sepsis &septic shock according to surviving sepsis campaign International guidelines for management of severe sepsis &septic shocks 3,4

Body temperature was about 38oc .heart rate was greater than 90-95/ min.respiratoy rate was high,WBCS count was less than 4000/mm3 in presence of infection. 3

According to lung injury severity score,on day 1 3.3(severe),day2 moderate 2.3because-

Extensive air space consolidation in a 4 quadrants lung of chest x ray PA view both days

Hypoxia score was4 onday 1&2 onday2 , PEEP Score was2 on day 1 ,1on day 2

lung involvement was---compatible -with acutelung injury I progressing to chronic phase.5

No other cause of ARDS was identified.The association of typhoid fever with ARDS is rare but not surprising because ARDS &systemic inflammatory response syndrome(SIRAS) occurs with gram negative infections.

Endotoxins detected in blood of typhoid fever 2

In typhoid fever usually sputum culture for s.typhi is negative in pulmonary involvement.

Fiber optic bronchoscopy has done,Bronchoalveolarlavage performed but does not revealed any microbiological agents .so specific antibiotic therapy was followed by negative culture & improvement.

Therapy of ARDS was supportive directed as keeping fluid balance negative.vasopressors ,blood transfusion,diuretics,antibiotics.ow tidal volume(4ml/kg/bodywt) while patient was on mechanical ventilation & high PEEP.prone positioning every 18-20 hrs/day.we didn't use steroids-There werethe strategies associated with clinical improvement & survival.6,7,8

Conclusion

In developing countries like India &others. Typhoid fever with sepsis should be included in differential diagnosis of ARDS & IF the patient originates from or has recently visited to developing countries should be targeted for prevention.

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