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Case Report of Neonatal Tetanus

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Abstract: ***Introduction: Neonatal tetanus is the infantile form of generalized tetatnus. Usually seen on 3-12 days of birth. Caused by clostridium tetani, which is Spore forming, motile gram positive, obligate anaerobe. Approximately 20, 000 deaths occurred due to Neonatal Tetanus. They present with difficulty in sucking and swallowing, Paralysis of movement, rigidity to touch and spasm, with or without opisthotonus. Portal of entry is umbilical stump. it is purely a clinical diagnosis. Case report: 8 day old male child admitted in new civil hospital with complaint of generalized seizure. After admission in nicu baby develop spasm to noise, painand we reached to the diagnosis of Neonatal Tetanus. We took detail history from the mother. According to the mother baby was delivered at home by aya (local dai). Unsterilized technique were used during delivery, cord was cut with unsterilized blade, tie with thread. Mother had not taken Tetanus toxoid dose. In our nicu since patient had breathing difficulty was kept on ventilator, injection metronidazole, inj diazepam, inj TT and inj tetglob, Injection penicillin G, meropenem, Inj collistin given. Patient was kept in isolation room. patient condition was deteriorating day by day. Condition was explained to relative and they took DAMA since chances of survival was little less. Discussion: Neonatal tetanus can be prevented by proper immunization of mother, neonate. Taking aseptic precaution during time of delivery. In rural area this work can be done by ASHA worker. Conclusion: Clinician should be aware of condition. Neonatal tetanus in majority of cases leads to death of pateint.***

Keywords: Neonatal Tetanus, Human tetanus immunoglobulin, opisthotonus, metronidazole, penicillin-G.

1. Introduction

Tetanus is a acute, life threatening disease, causing spastic paralytic illness, caused by anaerobic spore forming bacterium, clostridium tetani. symptoms produce depend on the neurotoxin, they gain entry through breach in susceptible host, multiply under anaerobic environment. They release toxin called tetanospasmin (tetanus toxin).[1, 2, 3]. Tetanospasmin is the 2nd most poisonous substance known.

The lethal dose in human of tetanus toxin is estimated 10^5 mg/kg. [(3).] Neonatal tetanus is always fatal [(4, 5).] There are four main type of Neonatal tetanus (a) local tetanus (b) cephalic tetanus (c) generalized tetanus (d) Neonatal tetanus [(6).]

Features of clostridium tetani include:-motile organism, gram Positive spore forming obligateanaerobe. Natural habit of organism include soil, dust alimentary tracts of various animals.

It resembles microscopically drumstick or tennis racket.

In 2015 approximately 57, 000 deaths occurred due to tetanus globally. Out of these 20, 000 deaths occurred in Neonate and 37, 000 in older children [(3).] Neonatal tetanus caused by use of unsterile equipment to cut cord, home delivery, application of cow dung, unsafe traditional practice. [(7, 8)]

Without treatment case fatality is 100% and with intensive care it is decreased to 10-20% [(9).]

Incubation period is 2-14 days. Most often presentation is generalized tetanus but sometimes localized form too present. Presenting symptom of generalized tetanusis trismus. Other feature include risus sardonicus and opisthotonus. They are prone for airway obstruction and asphyxiation reason being laryngeal and respiratory muscle spasm.

Neonatal tetanus, typically manifest within 3-12 days of birth. Characteristic are:-progressive difficulty in feeding, associated hunger, crying, paralysis/ diminished movement, rigidity to touch and spasm with or without opisthotonos.

Mortality is high when Neonatal tetanus present less than 7 days old [(10, 11)] hence it can be prevented by vaccinating pregnant or non-pregnant women or both with tetanus toxoid and through safe delivery. I would like to present a case report of Neonatal tetanus presented to new civil hospital with history of Neonatal convulsion.

2. Case Report

8 days old Male child presented to New civil hospital, surat with chief complaint of tonic spasm, not able to feed properly, high grade fever and excessive crying. Baby was admitted under NICU care. History taken from parents, FTNVD with Birth weight of 2.4kg, born out of non-consanguious marriage. CIAB, baby was delivered at home, delivery was performed by local dai, Cord cutting done with unsterile blade. For the 1st 7 day patient was alright suddenly patientdevelop seizure, refusal to feed, etc. Initially patient treatment for Neonatal convulsion, so loading dose of phenobarbital given. When RBS was done patient develop spasm, later patient started developing spasm to noise.

After 2 min patient started developing spasm to light, noise and pain so patient shifted to isolation room, with dark surrounding.

On Examination:-T:-100.8, FHR:-150/min, RR:-64/ min, Rs:-AEBE present, cvs:-s1s2 present, CNS:-brisk tendon reflex,. CRT less than 3 sec. peripheral pulses good. RBS

was 70 mg/kg. spo2:-98%Investigation:-CBC, S. calcium, RFT with electrolyte, blood culture, CSF, CRP.

Treatment:-patient was kept in quiet room, Intravenous fluid started, TT injection, Human tetanus immunoglobulin injection given. Injection phenobarbital given for convulsion, also ingestion diazepam started. As muscle relaxants injection methocarbamol started.

Antibiotics:-injection penicillin G, injection metronidazole, initially injection cefotaxime and injection amikacin started later changed to injection meropenem, injection vancomycin and injection collistin started.

Respiratory support:-o2 prong 2L/min followed by BPCAP and finally intubation done. Since ryles tube was hemorrhagic injection vitamin k and FFP given.

Since pateint condition was deteriorating day by day, no improvement in clinical condition.

Also perfusion started deteriorating, patient started on pressure support, also patient required high fio2 requirement. Poor condition of patient was explained to relative hence they don't want to

Continue further treatment so they took DAMA.

3. Discussion

Neonatal Tetanus case fatality rate without treatment approaches 100% and with treatment decreased to 10-20%. The WHO aimed at global elimination of Neonatal tetanus. Prognosis depends on a) onset of symptoms in 1st week of life b) interval between lockjaw and spasm less than 48hr of life. c) Intensity and presence of fever d) tachycardia e) duration of muscular spasm f) frequent apneic episode. [(12).]

Management will include:

1) General Measure:
   a) Nurse in quiet room
   b) minimum handling
   c) avoid IM injection
   d) oral suction has to be done regularly
   e) control of fever
2) Intravenous infusion:-stop oral feed and start IVF.
3) Anti-toxin serum:-Human tetanus Immunoglobulin, single dose of 250 iu/kg Intravenous.
4) Sedation:-Diazepam 2-5 mg and chlorpromazine 2 mg/kg/ dose IV 2-4 hourly. alternating with each intractable cases IV paralydehyde can be given.
5) Muscle relaxant:-Methocarbamol or Mephenesin.
6) Antibiotics:-Penicillin, gentamicin/amikacin and cefotaxime.
7) Tracheostomy and assisted ventilation.

4. Conclusion

In resources setting area Management of Neonatal tetanus still poses a great challenge. as in some region availability to ventilator, Tetanus immunoglobulin create problem.
Neonatal tetanus can beeasily prevented by following 5C:-clean hand, clean surface, clean blade, clean cord clamp, clean towel.

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