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A case report on younger case of T-cell Leukemia with Covid 19

1] Ms. Kajal Thool*, 2] Sarika Khadse, 3] Indu Alwadkar , 4] Shital Telrandhe 5] M. S. Narlawar

GNM 3rd year, Florence Nightingale Training College of Nursing, Datta Meghe Institute of Medical sciences (DU) Sawangi (M) Wardha. Email: kajalthul2@gmail.com

Vice-Principal, Florence Nightingale Training College of Nursing, Datta Meghe Institute of Medical sciences (DU) Sawangi (M) Wardha. Email: sarikaselsurkar@gmail.com Mobile No. 9503807766

Principal, Florence Nightingale Training College of Nursing, Datta Meghe Institute of Medical sciences (DU) Sawangi (M) Wardha. Email: indu.alwadkar@gmail.com Mobile No. 9960278995

Research Consultant, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical sciences (DU) Sawangi (M) Wardha.

Dept. of Electronics & Tele. Engineering, Yeshwantrao Chavan College of Engineering, Nagpur. Email: narlawar_milind@yahoo.co.in

Abstract:

Introduction: Lymphocyte leukemia/lymphoma (ATLL) is a fringe T-cell harm brought about by human T-cell leukemia infection type. Lymphocyte leukemia (ATL) is an exceptionally forceful developed T-cell neoplasm related with human T-cell lymphotropic infection type 1 (HTLV-1) contamination, which influences around 10 million individuals on the planet. Of them, roughly 1-5% at last creates indicative ATL.

Patient history: A 15 years male was admitted in AVBRH with complaint of fever, decrease appetite from 1 month, vomiting with blood tinged food particles and melena. Patient was diagnosed case of T-cell variant ALL. Before coming to AVBRH he was admitted to GMC Nagpur where he was diagnosed to had T-cell ALL with aberrant expression of CD10. He also had generalised lymphadenopathy and massive hepatosplenomegaly. He was advised blood transfusion but gives no H/O the same. Then he was discharged. After that patient developed malaena and blood tinged vomiting for which he came to AVBRH for further management. After his arrival, he was covid-19 positive so shifted to COVID ward. After two weeks, RTPCR status was negative then he shifted to PICU.

.**Clinical finding:** The patient had done all necessary investigations by physician order. **Medical Management:** Patient was treated with IV. Fluids, platelet transfusion, chemotherapy, steroids, calcium gluconate, antibiotics, antacid, vit c and multivitamins.

Nursing management: Administered fluid replacement i.e. D5, chemotherapy, platelet transfusion monitored all vital signs half hourly. **Conclusion:** Timely treatment and management of T-cell ALL with aberrant expression of CD10 with post COVID-19 infection.

Keywords: T-cell, Covid- 19, leukemia.

Introduction:

T-cell intense lymphoblastic leukemia (T-ALL) addresses around 12% to 15% of all recently analyzed ALL cases in paediatric patients and is vital for its exceptional clinical and natural highlights. Albeit generally, results for T-ALL were substandard compared to those of B lymphoblastic leukemia (B-ALL), with ongoing advances in treatment, occasion free endurance (EFS) rates have been consistently improving and now surpass 85% in numerous contemporary clinical preliminaries. Fix, notwithstanding, has not come without an expense, as concentrated treatment is required. Further,

repetitive infection is extremely hard to rescue, and moderately barely any new medications have been produced for kids with safe illness.[1]ATLL is an uncommon element in Europe and North America, and it is considerably more typical in populaces with endemic HTLV-1 disease, for example, in southern Japan, sub-Saharan Africa, the Caribbean Basin, and South America. In nonendemic districts, disease and resulting ATLL can be discovered most normally in regions high in settler populaces. In United States, the occurrence of ATLL is roughly 0.05 per 100,000. The infection can spread through vertical transmission, sex, bonding of tainted cell blood items, and utilization of needles polluted with the infection (e.g., sharing needles in IVDU). The mean period of analysis of ATLL is around 60 years and with no sexual power. Familial grouping has been seen, recommending a potential part of hereditary inclination. Patients can have differed clinical show of the infection. The infection is regularly partitioned into four clinical introductions: seething (sluggish), constant, lymphoma, and intense structure. Lymphoma and intense structures are related with most noticeably awful forecast. [2]
Immune system microorganism intense lymphoblastic leukemia (T-ALL) is a forceful threatening neoplasm of the bone marrow. It represents ∼20% of all instances of ALL and is to some degree more normal in grown-ups than youngsters, albeit the occurrence reduces with more established age.[1] Its clinical show can incorporate hyperleukocytosis with extramedullary contribution of lymph hubs and different organs, including regular focal sensory system invasion and the presence of a mediastinal mass, emerging from the thymus. T-ALL is a forerunner lymphoid neoplasm as indicated by the World Health Organization (WHO) order and is a particular element from grown-up T-cell leukemia/lymphoma, which is a threat of develop T cells brought about by human T-cell lymphotropic infection type I.[3] Pleural effusion in non-Hodgkin's (NHL) is generally associated with mediastinal adenopathy or seems as a part of recurrent NHL.[1] Initial presentation of NHL as primary pleural lymphoma is extremely rare. [2–5] The pleural effusion may be unilateral or bilateral and in a majority of patients the fluid causes symptoms of dyspnoea, cough, and/or chest pain. [6] Thoracentesis results in a positive cytologic diagnosis in 60% to 90% of the patients with NHL.[7] The diagnostic yield may be increased further by closed or visually directed pleural effusions and the application of immunocytologic methods. [7] In this article, we describe a case with Pleural effusion in non-HodgNHL) is generally associated with mediastinal adenopathy or seems as a part of recurrent NHL.

Patient Information:
A 15 years male was admitted in AVBRH with complaint of fever, decrease appetite from 1 month, vomiting with blood tinged food particles and melena. Patient was diagnosed case of T-cell variant ALL. Before coming to AVBRH he was admitted to GMC Nagpur where he was diagnosed to had T-cell ALL with aberrant expression of CD10. He also had generalised lymphadenopathy and massive hepatosplenomegaly. He was advised blood transfusion but gives no H/O the same. Then he was discharged. After that patient developed melena and blood tinged vomiting for which he came to AVBRH for further management. After he arrival he was covid-19 positive so shifted to COVID ward. After two weeks, RTPCR status was negative then he shifted to PICU.

Primary concerns and symptoms of the patient: A 15 years male was admitted in AVBRH with complaint of fever, decrease appetite from 1 month, vomiting with blood tinged food particles and melena.

Medical, family, and psycho-social history: Present case had history of blood cancer. In family history he is belong to nuclear family. He mentally stable, conscious and oriented. He was maintained the good relationship with doctors and nurses as well as other patients also.

Relevant past interventions with outcomes: Before coming to AVBRH he was admitted to GMC Nagpur where he was diagnosed to had T-cell ALL with aberrant expression of CD10.He also had generalised lymphadenopathy and massive hepatosplenomegaly. He was advised blood transfusion but gives no H/O the same . Then he was discharged. After that patient developed melena and blood tinged vomiting for which he came to AVBRH for further management. After he arrival he was covid-19 positive so shifted to COVID ward. After two weeks, RTPCR status was negative then he shifted to PICU.

Clinical Findings:

General examination
State of health: unhealthy
General condition – not satisfactory
State of consciousness: conscious
Body built: Moderate
Hygiene: poor
General Parameter:
Height: cm
Weight: kg
Vital parameter:
Blood pressure: 130/80 mmhg
Temperature: afebrile
Pulse: 100 beats/min.
Respiration: 30 breath/ min.
SPO_2: 98%
Pallor – present
Petechiae – present
Lymphadenopathy - Present
Systemic Examination
CVS – $S_1 S_{2+}$

Respiratory: No murmur sound

Timeline:
Historical and current data from this treatment episode, arranged as a timeline.

Diagnostic Assessment: Physical review on the basis of patient history, physical examination and other investigations revels different outcome, a thorough clinical evaluation. After Immunophenotyping Report: CD 45: Positive, CD 7: Positive, CD 8: Positive, CD 4: Positive, CD 10: Positive, CD 3: Positive.

Impression: In view of morphology, cytochemistry and immunophenotyping cultures are consistent with T-cell Acute Lymphoblastic Leukemia with aberrant expression of CD10.
USG Abdomen and Pelvis shows that Bilateral renal parenchymal disease with swollen kidneys with leukemic, mild hepatomegaly, gross splenomegaly.
CSF Fluid for cytology: smear shows only granular material, sparse red blood cells and very rare leucocytic nuclei and contaminants.
Bone Marrow smear: No evidence of relapse of ALL or no evidence of any abnormal leukemic cells noticed.
Diagnostic testing:

Kidney function test
Blood urea = normal
Creatine – serum = slightly decrease
Serum- Potassium = normal
Sodium (Na+) = Normal
Urine culture = pus cell present
Complete blood count
Hb% = Decrease
Total RBC count = Decrease
Total platelet count = Decrease
Total WBC count =Decrease
No any challenges during diagnostic evaluation.
Prognosis: Prognosis:

Therapeutic intervention:

Medical management: chemotherapy, 3 point platelet + 1 point PRC transfusion, IVF. DNS 350ml, Inj KCL 3.5 ml , inj MVI 3.5ml IV 8 Hourly, Inj Calcium gluconate 20ml in 20ml NS ,Inj Vancomycin 900mg in 20 ml D5 IV 6 hourly , Inj. Pantop 40 mg iv 12 hourly, Inj. Vincistine 2mg IV,Inj Daunorubicin 30 mg , Inj. Leunase 6000IU. IM, Tab. Cetrizine 10mg HS, Tab. Limcee 500mg OD, Syp. Sucralfate 10ml TDS, Syp. Cital 10ml in 1 glass of water TDS, Nasoclear nasal drop $2^{0\,TDS}$, Otrivin nasal drop 2^{0} TDS.

No any changes in therapeutic intervention.

Follow-up and outcomes:

Clinician and patient –assessed outcomes:

Important follow-up diagnostic and other test results:

Intervention adherence and tolerability

Adverse and unanticipated events:

Discussion:

A 15 years male was admitted in AVBRH with complaint of fever, decrease appetite from 1 month, vomiting with blood tinged food particles and melena. Patient was diagnosed case of T-cell variant ALL. Before coming to AVBRH he was admitted to GMC Nagpur where he was diagnosed to had T-cell

ALL with aberrant expression of CD10. He also had generalised lymphadenopathy and massive hepatosplenomegaly. He was advised blood transfusion but gives no H/O the same. Then he was discharged. After that patient developed melena and blood tinged vomiting for which he came to AVBRH for further management. After treatment patient condition was stable.

Miike et. al. conducted comparable examination on Clinical qualities of grown-up T-cell leukemia/lymphoma penetration in the gastrointestinal parts. Every one of the 40 patients who gave assent in this investigation went through upper GI endoscopy, while 29 patients went through both upper and lower GI endoscopy. Be that as it may, the leftover 11 patients with poor states of being, educated assent couldn't be gotten for lower GI endoscopy. Positive discoveries, like Candidal esophagitis, ulcers, disintegrations, tumor-framing sores, and diffuse overlap injuries, were seen in 22 of the 40 patients who went through GI endoscopy. Positive discoveries were seen in 21 of the 40 patients who went through upper GI endoscopy. Positive discoveries were seen in 6 of the 29 patients who went through lower GI endoscopy (Table 2). We noticed Candidal esophagitis in 5 patients, gastric ulcers in 10 patients, gastric disintegrations in 1 patient, gastric tumor-framing injuries in 3 patients, diffuse gastric overlap sores in 3 patients, duodenal ulcers in 1 patient, duodenal disintegrations in 2 patients, colonic ulcers in 2 patients, colonic tumor-shaping sores in 2 patients, and diffuse colonic crease sores in 2 patients, individually. Biopsy assessments were along these lines performed for histological conclusion. Of the 22 patients of the 40 complete patients who had upper/lower GI parcel endoscopic discoveries, 12 were determined to have ATLL invasion in the GI lot by histological assessment. Ten patients were determined to have ATLL invasion in the stomach by histological assessment. Two patients had no discoveries in the stomach. Six patients were determined to have ATLL penetration in the colon by histological assessment. Two patients had no discoveries in the colon. Four patients had none accessible in the colon. Four of the six patients had both gastric and colonic sores.[4] Different studies on leukemia were reported by Jameel et. al.[5] and Raut et. al.[6]. Studies on Covid 19 reflecting effects on healthcare specialties were reviewed[7-10].

Conclusion: Timely treatment and management of T-cell ALL with aberrant expression of CD10 with post COVID-19 infection.

References:

1. Raetz EA, Teachey DT. T-cell acute lymphoblastic leukemia. Hematology Am Soc Hematol Educ Program [Internet]. 2016 Dec 2 [cited 2021 Jun 18];2016(1):580–8. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6142501/
2. Choudhuri J, Geiser Roberts L, Zhang Y, Wang Y, Fang Y. A Rare CD4−CD8+ Adult T-Cell Leukemia/Lymphoma with Unique Molecular Mutations: A Case Report with Literature Review. Case Reports in Hematology [Internet]. 2020 Oct 30 [cited 2021 Jun 18];2020:e8890502. Available from: https://www.hindawi.com/journals/crihem/2020/8890502/
3. Litzow MR, Ferrando AA. How I treat T-cell acute lymphoblastic leukemia in adults. Blood [Internet]. 2015 Aug 13 [cited 2021 Jun 18];126(7):833–41. Available from: https://doi.org/10.1182/blood-2014-10-551895
4. Miike T, Kawakami H, Kameda T, Yamamoto S, Tahara Y, Hidaka T, et al. Clinical characteristics of adult T-cell leukemia/lymphoma infiltration in the gastrointestinal tract.

BMC Gastroenterology [Internet]. 2020 Sep 14 [cited 2021 Jun 18];20(1):298. Available from: https://doi.org/10.1186/s12876-020-01438-1.

5. Jameel, Patel Zeeshan, Sham Lohiya, Amol Dongre, Sachin Damke, and Bhavana B. Lakhkar. "Concurrent Diabetic Ketoacidosis and Pancreatitis in Paediatric Acute Lymphoblastic Leukemia Receiving L-Asparaginase." BMC PEDIATRICS 20, no. 1 (May 18, 2020). https://doi.org/10.1186/s12887-020-02136-3.
6. Raut, N., Mourya, A., Patil, M., 2020. Case report on acute lymphatic leukemia. Indian Journal of Forensic Medicine and Toxicology 14, 6811–6814. https://doi.org/10.37506/ijfmt.v14i4.12691
7. Reche, A., Kolse, R., Gupta, S., Ingle, A., Chhabra, K.G., Nimbulkar, G., 2020. Therapeutic options for COVID – 19: Pandemic – a review. International Journal of Research in Pharmaceutical Sciences 11, 420–424. https://doi.org/10.26452/ijrps.v11iSPL1.2802
8. Sethiya, K.R., Dhadse, P.V., 2020. COVID-19 and multi-systemic diseases: A review. International Journal of Research in Pharmaceutical Sciences 11, 1269–1277. https://doi.org/10.26452/ijrps.v11iSPL1.3617
9. Hande, Alka, Archana Sonone, Amol Gadbail, Madhuri Gawande, Swati Patil, and Preethi Sharma. "Modalities to Restrain the Progression of Oral Potentially Malignant Diseases and Oral Squamous Cell Carcinoma in COVID-19 Pandemic." ORAL ONCOLOGY 114 (March 2021). https://doi.org/10.1016/j.oraloncology.2020.105072.
10. Kute, Vivek, Sandeep Guleria, Jai Prakash, Sunil Shroff, Narayan Prasad, Sanjay K. Agarwal, Santosh Varughese, et al. "NOTTO Transplant Specific Guidelines with Reference to COVID-19." INDIAN JOURNAL OF NEPHROLOGY 30, no. 4 (August 2020): 215–20. https://doi.org/10.4103/ijn.IJN_299_20.