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Paraneoplastic cerebellar degeneration: A rare paraneoplastic syndrome

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Abstract
Paraneoplastic syndrome are rare disorders associated with cancers. Among then paraneoplastic cerebellar degeneration is classical PCS, presents acutely and sub acutely with walking incoordination, slurring of voice. Anti YO anti bodies are strongly associated with this PCS. Presence of anti YO antibody shows poor prognosis, and mild recovery with immunosuppressants. Treatment is not very promising in severely affected patient.

Keywords: Paraneoplastic cerebellar, cancers, human body, Anti YO anti bodies

Introduction
Paraneoplastic syndromes are characterized by an immune reaction against the tumour and secondarily to healthy tissue of the human body [1]. Most frequent PCS is paraneoplastic cerebellar degeration, that manifest with acute cerebellar sign and symptoms. Pathophysiology shows antibody against the various antigen like cerebellar degeration related protein (PCD2) found in purkinje cells. Most cases present with breast and ovarian cancers [2]. Rare presence of this syndrome does not allow randomized control trials, so treatment mostly decided by case series. Though there is nothing to treat for paraneoplastic syndrome but still the tumour removal is the best treatment. Most of investigators treat the patient of paraneoplastic syndrome with corticosteroids, IV immunoglobulins, plasma exchange, cyclophosphamide, rituximab and sometimes with mycophenolate mofetil [3]. Unfortunately, Prognosis is grave, and less than 10% patients can walk independently [4]. Here we present a rare case of ovarian cancer diagnosed with a paraneoplastic cerebellar degeration.

Case
A 53-year-old lady presented to outpatient department with H/O acute onset slurring of voice and walking imbalance for 8 days. With background H/O Adenocarcinoma ovary with total abdominal hysterectomy and bilateral salpingo-ophrectomy 3 years back. For that she was treated with chemotherapy and targeted radiotherapy, last cycle of chemotherapy was given July 2020. Her PET scan was normal in August 2020. Along with above background she was also a case Hypertension for 5 years. She is teacher by occupation and mother of two kids, with medium socioeconomic group. Personally, she is pure vegetarian, non-smoker and never took alcohol.
She was investigated for acute onset symptomology, her MRI brain was showing age related atrophy of brain, CT angiography brain and neck was normal, viral markers were negatives, complete blood count, platelets and haemoglobin was normal. Her serum creatinine level, cortisol, serum electrolytes were within normal limit. Her Nerve conduction study for all four limbs was normal. For further evaluation she was planned for CSF analysis. Cerebro spinal fluid biochemistry was normal with 5 cells, normal proteins and sugar level. CSF malignment cells were not detected. CSF was also negative for any viral, fungal and bacterial infection. Her paraneoplastic antibody panel were sent in CSF suspecting paraneoplastic syndrome as she a diagnosed case of adenocarcinoma ovary in the past. Her Anti YO antibody titre was significantly high. That confirmed the diagnosis in favour of paraneoplastic cerebellar degeneration.

She was treated with IV Methyl prednisolone 1 gram for five consecutive days, she responded a little in terms of improved slurring of voice, truncal ataxia and was able to walk unassisted. She was sent home with oral steroids and immunosuppressant mycophenolate mofetil.

Discussion

Paraneoplastic syndromes are related to presence of cancer in the body, they may appear even before the tumour in the body. Paraneoplastic cerebellar degeneration is classical PNS type. Early diagnosis and aggressive treatment can improve the mortality and morbidity associated with this syndrome [5]. PCD occurs mostly with solid tumours of ovary, breast and lungs. But sometimes it may appear with lymphoma also. Immunosuppressive treatment is not very helpful in severely involved anti neuronal antibody positive cases; some stabilization of symptoms may be there in mild symptomatology [6].

Conflict of interest

The authors declare that they have no conflict of interest.

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Patient consent for publication

Obtained.

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