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REVIEW ARTICLE

IS THE MIXED POLYNEUROPATHY A PART OF IFN THERAPY IN CHILD-A LIVER DISEASE HCV RELATED?

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ABSTRACT

The combination of polyethylene glycol (pegylated interferon) interferon and ribavirin has been shown to be an effective treatment for chronic hepatitis C virus. In general, common side effects related to this combination therapy are mild and are well tolerated. However, peripheral neuropathy including mixed type of polyneuropathy related to PEG-interferon α-2a (pegylated interferon alfa-2a) is extremely rare. In the literature, few case of acute inflammatory demyelinating polyneuropathy related to PEG-interferon α-2a has been published previously.

INTRODUCTION

Mohammed Shamshad, a 35 year old gentleman bearing hospital unit number C-7490868 came to casualty with chief complaints of pain bilateral lower limbs. He is a diagnosed case of HCV realated liver disease (compensated) on therapy. His chief complaints were pain in his bilateral lower limbs two day prior to admission he was not able to walk or get up from bed to pass stools because of intense pain. He gave history of mild bilateral pedal edema on prolonged upright position. He denies of trauma to the limbs or use of any drugs. He was started on regular interferon alpha-2b therapy 3 times a week for last three weeks prior to admission following his high HCV RNA viral load (22, 85, 229 IU /ml). He had complaints of flu like symptoms, chest discomfort, fatigue, myalgias following fewinjection at the initial part of his therapy, however on continuation of the therapy all above symptoms subsided. On examination he was having bilateral hyperaesthesia and pain on fine touch in his lower limbs as compared to upper limbs, but there was no evidence of wasting of muscles, fasciculation and his planter was flexure. A neurologic consult was sought they advised a nerve conduction study and MRI L-S spine, NCS was done which showed mixed type of polyneuropathy. On discontinuing the treatment and on follow up, he improved completely after four weeks. And his repeat NCS showed normal, he was not restarted Interferon again.

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Lab

Hb 12.2, PCV 32.8, TLC 6900, PLATELETS 83000,PT-18.9/12.2 INR 1.52, APTT 33/24, LFT: Total protein 5.9, albumin 3, total bilirubin -1.0, direct bilirubin -0.5, GGT 51, ALP 193, SGOT 93, SGPT 47, CPK 333, Vitamin B 12 > 1200, Folic acid - 18, Vitamin D3 17 ng/ml, ABG: PH 7.458, PCO2 21.1, PO2 131, HCO3 16.7, LACTATE 1.1, Cryglobins were negative.

USG ABDOMEN: Mildly coarse echotexture liver, reactionary cholecystitis, ihbr not dilated minimal ascites, blood c/s: no growth

URINE C/S: No growth

Ultrasound Doppler: It showed no thrombus, bilateral femoral and popliteal veins showed normal venous flow. compressibility, normal response to distal augmentation.
MRI L-S spine was normal.

NERVE CONDUCTION TEST: Which showed Mixed type of polyneuropathy.

DISCUSSION

Interferon based treatment for HCV infection is associated with CNS complications which encompass a wide spectrum of

disorders ranging from cerebrovascular events to autoimmune syndromes (**Lauer and Walker, 2001**).

However, their relatively low frequency, in addition to the heterogeneity of neurological manifestations, and the paucity of pathological observations, largely preclude the achievement of reliable information as to the pathogenesis of different syndromes (**Comi *et al*., 2001**). However these are slowly progressive related to therapy and major issue whether treatment is to be discontinued or not. Hepatitis C virus (HCV) infection is common in the general population and may coincide with disease in the central and peripheral nervous system (**Cochrane Database of Systematic Reviews, 2014; Yoshida *et al*., 2002 and Cacoub *et al*., 1998**). The therapeutic benefit is assumed to result from activation of natural killer cells and CD8+ T cells. Despite its beneficial effects, it has been associated with a number of autoimmune disorders, such as chronic inflammatory demyelinating polyneuropathy (CIDP) and multiple sclerosis (MS) (**Serena *et al*., 1991; Mestre *et al*., 2007 and De Carli *et al*., 2009**). Several clinical reports including magnetic resonance imaging exist, but neuropathological confirmation of MS associated with IFN-alpha therapy and HCV infection is lacking (**Weissenborn *et al*., 2009 and Bonetti *et al*., 1997**).

Conclusion

The development of fulminant demyelinating disease after administration of IFN-alpha suggests that autoimmune mechanisms such as T cell mediated tissue damage might be initiated or aggravated by IFN-alpha therapy. Additionally, the presence of HCV RNA within the demyelinated lesion indicates a possible role in triggering or propagating disease. This particular case where treatment was discontinued for several weeks, he improved slowly without any other therapy. If it would be due to HCV related neurologic complication which is more common with HCV related, it should progress without any remission. Treatment of HCV infection with use of Interferon should definitive cure the patient but it may sometime develop untoward complication which should be in the mind of treating physician. And timely withdrawing the agent associated with complication may benefit the individual.

Abbreviations

CIDP: Chronic inflammatory demyelinating polyneuropathy MS-multiple sclerosis.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

Dr K C Das,Dr sumeet david, Nitin, Nirmala, Ashvin, Ritu Massey were involved in the clinical assessment and writing the case report.

All authors read and approved the final manuscript.

Consent

Full written consent was received for the manuscript to be published.

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REFERENCES

Bonetti, B., Invernizzi, F. and Rizzuto, N. *et al*., 1997. "T-cell-mediated epineurial vasculitis and humoral-mediated microangiopathic neuropathy in HCV related treatment with Interferon," *Journal of Neuroimmunology*, vol. 73, no. 1-2, pp. 145–154.

Cacoub, P., Sbaï, A., Hausfater, P., Papo, T., Gatel, A. and Piette, J. C. 1998. "Central nervous system involvement in patients treated with hepatitis C virus infection," *Gastroenterologie Clinique et al. Biologique*, Vol. 22, no. 6-7, pp. 631–633.

Cochrane Database of Systematic Reviews: Treatment for peripheral neuropathy associated with hepatitis C virus infection: 2015. sReview content assessed as up-to-date: August 26, 2014.

Comi, G., Filippi, M., Barkhof, F. and Durelli, L. 2001 May 19. Effect of early interferon treatment on conversion to multiple sclerosis: a randomised study. 357(9268).1576-82.

De Carli, D. M., Pannebeker, J., Pedro, F. L., Haygert, C. J. P., Hertz, E. and Beck, M. D. O. 2009. "Transverse myelitis associated to HCV infection and its treatment" *Brazilian Journal of Infectious Diseases*, Vol. 13, No. 2, pp. 147–152,

Lauer, G. M. and Walker, B. D. 2001. "Hepatitis C virus infection," New England Journal of Medicine, vol. 345, no. 1, pp. 41–52, View at Publisher · View at Google Scholar · View at Scopus.

Mestre, T. A., Correia de Sá, J. and Pimentel, J. 2007. "Multifocal central and peripheral demyelination associated with hepatitis C virus infection," *Journal of Neurology*, vol. 254, no. 12, pp. 1754–1756.

Serena, M., Biscaro, R., Moretto, G. and Recchia, E. 1991. "Peripheral and central nervous system involvement in essential mixed cryoglobulinemia: *Clinical Neuropathology*, Vol. 10, no. 4, pp. 177–180.

Weissenborn, K., Tryc, A. B., Heeren, M. *et al*. 2009. "Hepatitis C virus infection, treatment and the brain," *Metabolic Brain Disease*, Vol. 24, no. 1, pp. 197–210.

Yoshida, H., Arakawa, Y. and Sata, M. *et al.* 2002 Aug. Interferon therapy prolonged life expectancy among chronic hepatitis C patients; 123(2):483-91.

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