absence of hepatitis C virus infection in non-Hodgkin's lymphoma

Recently it has been suggested that hepatitis C virus (HCV), which is both a hepatotropic and a lymphotropic virus (Ferri et al., 1993), is associated with non-Hodgkin’s lymphomas (NHL), especially B-cell lymphomas of low-grade malignancy (Luppi et al., 1996). Serological findings showed a HCV positivity in patients with NHL as high as 28–42% (Luppi et al., 1996; Mazzaro et al., 1996; Ferri et al., 1994). The mechanism of this association is still unknown. A possible direct oncogenic effect has been suggested because several cases of hepatocellular carcinoma in patients with HCV infection, without preceding cirrhosis, have been described (de Mitri et al., 1995). However, HCV is not endowed with oncogenes or reverse transcriptase, enabling genome integration, and consequently research was focused on the possible oncogenic or proliferative effect of viral proteins.

On the other hand, Brind et al. (1996) reported that HCV is an uncommon contributory factor for the development of NHL in the U.K.: none of the 63 patients with NHL screened for HCV infection were positive with the ELISA test. A possible explanation for the discrepancy between these studies is the fact that HCV is much more common in Italy than in the British population. Either there is no association between HCV and the development of NHL in the U.K., or the association is more difficult to demonstrate because of a low prevalence of HCV.
Stimulated by the previous findings, we investigated the seroprevalence of HCV infection in all 115 unselected patients with NHL who visited our outpatient Haematology clinic, in the East Netherlands, during a 6-week period. The study group included 27 previously untreated patients and 88 patients on treatment or in remission after treatment. The grade of malignancy was low in 51 (44%), intermediate in 42 (37%) and high in 22 (19%). HCV antibodies were detected by ELISA using commercially available kits: Abbott. In case of a positive result an additional confirmatory test was performed (RIBA; Chiron Corp. Emeryville, Calif.). Hepatitis B virus serology markers were detected by RIBA using commercially available kit, Abbott. All patients but one were seronegative with ELISA. The only patient who had a positive ELISA test was negative at the RIBA confirmatory test. Negative serologic results in HCV infected patients may be a consequence of immunosuppression due to therapy. However, only nine patients had reduced white blood cell counts at the time of HCV diagnosis. Only 17 patients had elevated ALT levels and/or a history of blood transfusion before 1989. These patients were also seronegative.

Our data do not support an association between HCV infection and B-cell NHL in our region. It is possible that other factors associated with HCV or specific HCV subtypes are responsible for the presumed association with NHL. Further studies are required to investigate the potential role of HCV in the development of NHL in different geographic areas, taking into account viral characteristics.

**REFERENCES**


**Keywords:** non-Hodgkin's lymphoma, hepatitis C virus infection.