

# Infeksi hepatitis C terkait transfusi komponen darah pada Hemofilia dan Von Willebrand anak Sbelum dan sesudah penerapan Nucleic Acid Testing untuk Skrining Darah Donor. = Hepatitis C Infection Related to Blood Transfusion in Children with Hemofilia and Von Willebrand Before and After the Implementation of Nucleic Acid Testing as the Method of Blood Donor Screening.

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## Abstrak

Latar belakang: Pasien dengan hemofilia dan Von Willebrand (VWD) memiliki risiko infeksi terkait transfusi, salah satunya adalah infeksi hepatitis C (HCV). Skrining darah donor terbaru adalah nucleic acid testing (NAT) dengan window period 3 hari. Berdasarkan rekapitulasi pasien hemofilia dewasa di RS Cipto Mangunkusumo tahun 2012, ditemukan 38% mengalami infeksi HCV dan dua diantaranya sudah didiagnosis dengan sirosis hati. Pengobatan infeksi HCV secara dini dapat menurunkan risiko sirosis hati. Namun saat ini belum ada data mengenai proporsi infeksi HCV pada hemofilia dan VWD anak yang menggunakan NAT dan tidak menggunakan NAT untuk skrining darah donor.

Tujuan: Mengetahui proporsi infeksi HCV pada pasien hemofilia dan VWD anak yang tidak menggunakan skrining NAT dan yang menggunakan skrining NAT.

Metode: Penelitian ini menggunakan desain kohort retrospektif yang dilakukan terhadap pasien hemofilia dan Von Willebrand (VWD) anak dengan riwayat transfusi komponen darah. Subyek penelitian dieksklusi bila memiliki riwayat penggunaan jarum suntik bergantian dan ibu dengan riwayat infeksi HCV C. Subyek penelitian dibagi menjadi kelompok tidak menggunakan skrining NAT dan menggunakan skrining NAT. Kemudian dilakukan pemeriksaan anti HCV pada tiap kelompok. Subyek dengan hasil anti HCV reaktif menjalani pemeriksaan HCV RNA. Kemudian dilakukan analisa risiko relatif (RR) antara penggunaan skrining NAT terhadap proporsi infeksi HCV.

Hasil: Studi dilakukan terhadap 108 subyek penelitian mendapatkan proporsi anti HCV reaktif pada kelompok yang tidak menggunakan skrining NAT sebesar 3,3% (3/91) dan pada kelompok yang menggunakan skrining NAT sebesar 0% (0/17). Analisis hubungan antara penggunaan skrining NAT dan anti HCV reaktif ditemukan hasil RR = 1,034 (IK95% 0,996-1,074) dengan nilai P 0,448 dan kekuatan penelitian 8,3%. Hasil pemeriksaan HCV RNA tidak ditemukan virus pada kedua subyek dengan anti HCV reaktif.

Simpulan: Proporsi anti HCV reaktif pada kelompok dengan riwayat transfusi komponen darah yang tidak menggunakan skrining NAT lebih besar dibandingkan dengan kelompok yang menggunakan skrining NAT. Namun hasil pemeriksaan HCV RNA tidak ditemukan virus pada seluruh subyek dengan anti HCV reaktif.

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.....Background: Patient with hemophilia and Von Willebrand (VWD) have an increased risk of acquiring transfusion transmitted infection (TTI). The latest technology of blood donor screening method were using nucleic acid testing (NAT). In 2012, there were 38% of adult with hemophilia acquiring hepatitis C infection

in Cipto Mangunkusumo hospital and two of them had developed liver cirrhosis. Early initiation of therapy may prevent the progression of hepatitis C (HCV) infection into liver cirrhosis. Currently, there is no data regarding the incidence of HCV infection in children with hemophilia and VWD before and after the implementation of NAT for blood donor screening.

**Aim:** To determine the incidence of HCV infection in children with hemophilia and VWD who were not using NAT compares to the one who were using NAT as their blood screening method.

**Method:** It is a cohort retrospective study of children with hemophilia and VWD with history of blood transfusion. The exclusion criteria were personal history of sharing needle and having mother with history of HCV infection. Subjects were divided into the group of subjects who were using NAT and not using NAT for blood donor screening method. Anti HCV examination were performed on each group. HCV RNA examination were carried out only on subjects with reactive anti HCV result. Relative risk (RR) of using NAT related to the incidence of HCV infection were then calculated.

**Results:** Study in 108 subjects reported the incidence of reactive anti HCV in a group who were not using NAT around 2% (2/91) compared to other group who were using NAT around 0% (0/17). The association between NAT implementation and the incidence of HCV infection showed RR = 1.022 (CI95% 0.991-1.054) with P value of 0.54 and power of 8.4%. HCV RNA examination showed no virus were found on both subjects with reactive anti HCV.

**Conclusion:** The incidence of reactive anti HCV was higher in the group who were not using NAT compared to the other group who were using NAT as their blood screening method. However, HCV RNA showed no virus were found on all subjects with reactive anti HCV. It is recommended to consider NAT as screening method due to 3 subjects were found to have history of hepatitis C infection in current study.