

## INTISARI

### **RISIKO TERJADINYA ANEMIA PADA PASIEN *HUMAN IMMUNODEFICIENCY VIRUS* DENGAN CD4 200-350 DAN CD4>350 SETELAH PENGGUNAAN ANTIRETROVIRUS YANG MENGANDUNG ZIDOVUDIN**

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**Pendahuluan:** Infeksi HIV mampu menurunkan kadar CD4, penurunan kadar CD4 berpengaruh pada penurunan kadar Hb dan kejadian anemia. Anemia pada pasien HIV disebabkan dua hal, yaitu :aktivasi gen pro apoptosis (karena menurunnya CD4 dan peningkatan jumlah monosit) dan pemberian zidovudin, sebagai antiretrovirus. Diketahui bahwa kadar CD4 500 sel/mm<sup>3</sup> sudah mampu menyebabkan anemia, dan CD4 <350 sel/mm<sup>3</sup> mampu menyebabkan anemia berat. Namun belum dapat diketahui hubungan antara kadar CD4 dengan pemberian zidovudin, serta faktor-faktor lain yang berpengaruh terhadap kejadian anemia.

**Tujuan:** membuktikan risiko terjadinya anemia, rerata penurunan, dan waktu penurunan Hb pada pasien HIV yang mendapat zidovudin pada kadar awal 200-350 sel/mm<sup>3</sup> lebih tinggi dibandingkan pasien dengan kadar awal CD4 >350 sel/mm<sup>3</sup> serta mengetahui faktor-faktor yang berpengaruh terhadap kejadian anemia.

**Metode:** Penelitian ini dilakukan dengan metode *cohort retrospective* pada rekam medis pasien HIV di RSUD DR. Soetomo Surabaya. Subjek penelitiannya adalah pasien HIV dewasa terdiagnosis HIV pada tahun 2008-2015, memiliki kadar CD4 200-350 sel/mm<sup>3</sup> dan >350 sel/mm<sup>3</sup>, serta diberikan zidovudin. Kemudian dilihat kadar Hb sebelum dan setelah diberikan zidovudin.

**Hasil:** Terdapat 97 subjek penelitian (50 pria dan 47 wanita) dengan rentang umur terbanyak 26 – 46 tahun (70,1%). Stadium terbanyak yang diderita subjek adalah stadium III (43,3%). Berat badan 40- 60 kg (73,2%) adalah berat badan terbanyak yang dimiliki subjek. Heteroseksual adalah cara penularan yang paling beresiko (52,6%). Kadar Hb sebelum diberikan zidovudin merupakan faktor yang paling berpengaruh pada kejadian anemia ( $p=0,017$ ). Pasien dengan kadar CD4 200-350 sel/mm<sup>3</sup> mengalami penurunan Hb yang lebih besar mengalami penurunan kadar Hb ( $3,2018 \pm 2,11424$ ) namun tidak bermakna secara signifikan. Waktu penurunan kadar Hb lebih cepat dialami oleh pasien dengan CD4 200-350 sel/mm<sup>3</sup> namun tidak bermakna secara signifikan.

**Kesimpulan:** risiko terjadinya anemia, rerata penurunan, dan waktu penurunan kadar Hb tidak berbeda antara CD4 200-350 sel/mm<sup>3</sup> dan CD4 >350 sel/mm<sup>3</sup>. Kadar Hb sebelum diberikan antiretrovirus berpengaruh pada penurunan kadar Hb setelah pemberian zidovudin.

**Kata Kunci:** HIV, limfosit T CD4, anemia, hemoglobin, antiretrovirus, zidovudin.

## ABSTRACT

### **RISK OF ANEMIA ON HUMAN IMMUNODEFICIENCY VIRUS PATIENT WITH CD4 200-350 AND CD4>350 AFTER USAGE OF ZIDOVUDIN ANTIRETROVIRAL**

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**Preface:** HIV infection could reduce level of CD4, which has effect on reduction of Hb level and anemia. Presence of anemia induced by 2 factors: activation of gen pro-apoptosis (caused by reduction of CD4 level and monocyte enhancement) and administration of zidovudin as antiretroviral. It has been known that CD4 counts 500cell/mm<sup>3</sup> already capable for causing anemia and CD4 counts <350cell/mm<sup>3</sup> can make severe anemia. But, relationship between CD4 levels and administration of zidovudin and other factors that have role in anemia have not been understood clearly.

**Objective:** To prove the risk of anemia, average and time reduction of Hb in HIV patients that have zidovudin therapy with first CD4 counts 200–350cell/mm<sup>3</sup> are higher than HIV patients with first CD4 counts >350cell/mm<sup>3</sup> and to know factors that might have role in anemia.

**Method:** The research was conducted with cohort retrospective method in HIV patient in RSUD DR. Soetomo's medical record. Subjects of research were adult patients that had been diagnosed with HIV between 2008-2015, level of CD4 200–350cell/mm<sup>3</sup> and >350cell/mm<sup>3</sup>, and were given with the zidovudin therapy. Then, we observed the Hb level before and after administration of zidovudin.

**Result:** There were 97 research's subject (50 male and 47 female) with age between 26-46 year-old (70.1%). Most of the subjects were in stage III (43.3%) and 40-60 kg in weight (73.2%). Heterosexual had the highest risk of transmission (52.6%). Level of Hb before administration of zidovudin is the most influenced factors in presence of anemia (p=0.017). Patients with CD4 count between 200–350cell/mm<sup>3</sup> had the greatest Hb reduction (3.202 ± 2.114), but not significant. Time reduction of Hb was more rapid in patients with CD4 200-350cell/mm<sup>3</sup> but not significant.

**Conclusion:** There are no differences in the risk of anemia, average and time reduction of Hb in HIV patients between CD4 200-350 cell/mm<sup>3</sup> and CD4 >350 cell/mm<sup>3</sup>. Levels of Hb before therapy of zidovudin has influence in reduction of Hb level after administration of zidovudin.

**Keywords:** HIV, CD4 lymphocyte-T, anemia, hemoglobin (Hb), antiretroviral, zidovudin