Penurunan kadar natrium dan kalium serum pada pasien terinfeksi dengue dengan atau tanpa kebocoran plasma = Decreased serum levels of sodium and potassium in dengue infected patients with or without plasma leakage / Rio Zakaria

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Abstrak

[ABSTRAK
Latar Belakang: Insiden dan case fatality rate pasien terinfeksi dengue di Indonesia masih tinggi. Penyebab kematian utama pada infeksi dengue adalah renjatan yang disebabkan oleh kebocoran plasma. Kejadian hiponatremia dan hipokalemia sering ditemukan pada pasien yang mengalami infeksi dengue, namun keduanya tidak termasuk penanda kebocoran plasma dalam kriteria DBD oleh WHO. Penelitian ini bertujuan untuk mengetahui rerata penurunan kadar natrium dan kalium serum pada pasien terinfeksi dengue dengan atau tanpa kebocoran plasma, dan mengonfirmasi penelitian sebelumnya apakah kadar natrium dan kalium bisa dipakai sebagai penanda kebocoran plasma.
Metode: Studi kohort prospektif dilaksanakan pada pasien terinfeksi dengue ≥ 16 tahun dengan demam mendadak ≤ 3 hari yang dirawat di ruang rawat inap Penyakit Dalam RS Cipto Mangunkusumo dan RS Persahabatan Jakarta pada pada Agustus 2013-Juni 2014. Dilakukan pemeriksaan natrium serum, kalium serum, albumin, dan ultrasonografi untuk melihat adanya penebalan kandung empedu, asites dan efusi pleura pada pasien terinfeksi dengue pada hari pertama masuk perawatan dan hari kelima demam. Untuk mendapatkan rerata penurunan natrium dan kalium serum antara pasien terinfeksi dengue yang mengalami kebocoran plasma dan yang tidak, digunakan uji komparatif t-test tidak berpasangan.
Hasil: Terdapat 35 orang subjek penelitian pasien terinfeksi dengue yang diambil secara konsekutif. Rerata kadar natrium serum pada pasien Demam Dengue (DD) pada saat masuk 134,66 ± 4,00 mEq/L dan pada hari kelima demam 130,95 ± 4,80 mEq/L. Sementara pada pasien Demam Berdarah Dengue (DBD) didapatkan kadar natrium pada saat masuk 132,469 ± 3,45 mEq/L dan pada saat hari kelima 129,35 ± 2,67 mEq/L. Perbedaan rerata penurunan kadar natrium antara pasien DBD dengan DD sebesar 0,43 mEq/L, IK 95% [-2,56; 3,42], p = 0,386. Rerata kadar kalium serum pada pasien DD pada saat masuk 3,48 ± 0,44 mEq/L dan pada hari kelima demam 3,39 ± 0,38 mEq/L. Sementara pada pasien DBD didapatkan rerata kadar kalium pada saat masuk 3,32 ± 0,25 mEq/L dan pada hari kelima demam 3,11 ± 0,30 mEq/L. Perbedaan rerata penurunan kadar kalium pasien DBD dengan DD sebesar 0,12 mEq/L, IK 95% [-0,34; 0,10], p = 0,145.
Simpulan: Tidak didapatkan perbedaan rerata penurunan kadar natrium dan kalium serum pada pasien terinfeksi dengue dengan kebocoran plasma dibandingkan

dengan tanpa kebocoran plasma.
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ABSTRACT
Background: Incidence and case fatality rate of dengue-infected patients in Indonesia is still high. The main causes of death in dengue infection is shock caused by plasma leakage. The incidence of hyponatremia and hypokalemia often found in patients with dengue infection, but they do not include markers of plasma leakage in DHF criteria by WHO. This study aims to determine the average decrease of serum sodium and potassium levels in patients infected with dengue with or without plasma leakage, and confirm previous studies whether the levels of sodium and potassium can be used as a marker of plasma leakage.
Method: A prospective cohort study conducted in patients infected with dengue ≥ 16 years old with sudden fever ≤ 3 days treated in Cipto Mangunkusumo Hospital and Persahabatan Hospital in Jakarta between August 2013 to June 2014. Checking serum sodium, potassium, albumin, and ultrasound to see the thickening of the gall bladder, ascites and pleural effusion in patients infected with dengue on the first day of treatment and the fifth day of fever. We used comparative unpaired t-test to obtain an average decrease in serum levels of sodium and potassium between dengue infected patients who undergo plasma leakage and are not.
Results: There were 35 research subjects infected with dengue taken consecutively. The average of serum sodium levels in patients with Dengue Fever (DF) at the time of entry was 134,66 ± 4,00 mEq/L and on the fifth day of fever was 130,95 ± 4,80 mEq/L. While in patients with Dengue Hemorrhagic Fever (DHF) obtained sodium levels at the time of entry was 132,469 ± 3,45 mEq/L and on the fifth day of fever was 129,35 ± 2,67 mEq/L. The difference of the average of decreased level of sodium between DHF and DF patients was 0,43 mEq/L, CI 95% [-2,56; 3,42], p = 0,386. The average of serum potassium levels in patients with DF at the time of entry was 3,48 ± 0,44 mEq/L and on the fifth day of fever was 3,39 ± 0,38 mEq/L. While in patients with DHF, obtained potassium levels at the time of entry was 3,32 ± 0,25 mEq/L and on the fifth day of fever was 3,11 ± 0,30 mEq/L. The difference of the average of decreased level of potassium between DHF and DF patients was 0,12 mEq/L, CI 95% [-0,34; 0,10], p = 0,145.
Conclusion: There were no differences in average of decreased level of serum sodium and potassium in dengue-infected patients with plasma leakage compared to without plasma leakage;Background: Incidence and case fatality rate of dengue-infected patients in Indonesia is still high. The main causes of death in dengue infection is shock caused by plasma leakage. The incidence of hyponatremia and hypokalemia often found in patients with dengue infection, but they do not include markers of plasma leakage in DHF criteria by WHO. This study aims to determine the average decrease of serum sodium and potassium levels in patients infected with dengue with or without plasma leakage, and confirm previous studies whether the levels of sodium and potassium can be used as a marker of plasma leakage.

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