Pengaruh penambahan natrium florida terhadap kadar 6 monoacetylmorphine dan morfin pada sampel darah = Effect of adding sodium flouride to the concentration of 6 monoacetylmorphine and morphine in blood samples

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Abstrak

Latar belakang: Pemakaian heroin masih cukup tinggi di Indonesia. Tesis ini membahas tentang pengaruh penambahan natrium florida pada penyimpanan sampel darah yang mengandung heroin (6 monoacetylmorphine dan morfin) di kulkas suhu 5°C - 15°.
Metode: Penelitian ini merupakan penelitian analitik eksperimental dalam lingkungan yang terkontrol. Terhadap 8 subjek penelitian diambil darahnya sebanyak 9 ml yaitu yang menggunakan heroin 30 menit hingga 3 jam sebelum pengambilan darah. Kemudian 9 ml darah dibagi menjadi 3 tabung, masing- masing tabung 3 ml. Tabung pertama langsung diperiksa kadar 6 monoacetylmorphine dan morfin menggunakan Gas Choromatography Mass Spectrometry. Tabung kedua yaitu darah dengan natrium florida dan tabung ketiga darah tanpa natrium florida disimpan dikulkas suhu 5°C - 15°C selama 3 hari.
Hasil: Pada pemeriksaan sampel hari pertama terhadap zat 6 monoacetylmorphine tidak ditemukan adanya zat tersebut. Karena pada kedelapan sampel , 6 monoacetylmorphinenya telah berubah menjadi morfin. Tetapi 6 monoacetylmorphine ini tetap ada hingga hari ketiga pada 50% sampel yang disimpan dengan natrium florida. Rata-rata kadar morfin hari pertama adalah 860,2 ± 669,5 ng/ml menurun pada hari ketiga menjadi 656,6 ± 425,8 ng/ml (sampel dengan penambahan natrium florida) , 448,2 ± 270,7 ng/ml (sampel tanpa penambahan natrium florida). Rata-rata perbedaan antara sebelum dan sesudah penyimpanan pada sampel yang ditambahkan natrium florida adalah 203,6 ± 252,4 ng/ml dengan signifikansi (p) = 0,057. Rata-rata perbedaan antara sebelum dan sesudah penyimpanan pada sampel tanpa penambahan natrium florida adalah 411,9 ± 475,2 ng/ml dengan signifikansi (p) = 0,044. Kesimpulan Dengan penambahan natrium florida dapat mencegah perubahan 6 monoacetylmorphine menjadi morfin pada 50% sampel penelitian. Pada sampel yang disimpan dengan natrium florida, tidak ada perbedaan bermakna antara kadar morfin sebelum dan sesudah penyimpanan selama 3 hari dikulkas suhu 5°C - 15°C. Pada sampel yang disimpan tanpa natrium florida , terdapat perbedaan yang bermakna antara kadar morfin sebelum dan sesudah penyimpanan selama 3 hari dikulkas suhu 5°C - 15°C.
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Background: Heroin consumption is still quite high in Indonesia. This study is to discuss the effect of adding sodium fluoride to the storage of blood samples containing heroin (6 monoacetylmorphine and morphine) in a refrigerator with a temperature of 5°C to 15°C.
Methods: This study is an experimental analysis in a controlled environment. To the 8 subject of study, 9 ml of blood was drawn who was using heroin 30 minutes to 3 hours before blood sampling. This 9 ml of blood were then saved into 3 tubes of 3 ml each. The first tube was directly examined for the levels of 6 monoacetylmorphine and morphine using Gas Choromatography-Mass Spectrometry. The second tube of blood with sodium fluoride and the third tube of blood without sodium fluoride were stored in refrigerator of 5°C to 15°C for 3 days.

Results: On the first day examinations, 6 monoacetylmorphine were not found, because all of the samples, 6 monoacetylmorphine has changed to morphine. But this 6 monoacetylmorphine remains until the third day in 50% of samples stored with sodium fluoride. Average concentration of morphine in the first day was 860.2 ± 669.5 ng/ml and decreased to 656.6 ± 425.8 ng/ml on the third day (samples with the addition of sodium fluoride), and to 448.2 ± 270.7 ng / ml (sample without the addition of sodium fluoride). The average difference between before and after storage in the samples added with sodium fluoride is 203.6 ± 252.4 ng/ml with significance of (p) = 0.057. The average difference between before and after storage in the samples without the addition of sodium fluoride was 411.9 ± 475.2 ng/ml with significance (p) = 0.044. Conclusion The additions of sodium fluoride prevent changes of 6 monoacetylmorphine into morphine in 50% of the study sample. In samples stored with sodium fluoride, there is no significant difference between the levels of morphine before and after storage for 3 days in refrigerator with temperature of 5°C to 15°C. In the samples stored without sodium fluoride, while there is a significant difference between the levels of morphine before and after storage for 3 days in refrigerator temperature of 5°C to 15°C.