

Hubungan Kadar Leukosit Esterase Dan Kadar Nitrit di Urin Pada Pasien Infeksi Saluran Kemih

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INTISARI

Latar Belakang : Infeksi Saluran Kemih (ISK) merupakan penyebab urosepsis yang merupakan penyebab sepsis terbanyak setelah infeksi saluran nafas. ISK menyerang pasien dari segala usia dari bayi sampai orang tua. Bakteriuria asimtomatik pada wanita usia 18–40 tahun adalah 5-6% dan angka itu meningkat menjadi 20% pada wanita usia lanjut, hal ini ditunjukkan adanya leukosit esterase dan kadar nitrit yang positif. Leukosit esterase adalah sebagai penanda adanya inflamasi atau piuria pada saluran kemih. Sedangkan adanya nitrit dalam urin, sebagai penanda adanya bakteriuria. Penelitian ini menggunakan dipstik urin untuk mengetahui kadar leukosit esterase dan kadar nitrit di urin untuk mendiagnosis ISK.

Tujuan Penelitian : Untuk mengetahui hubungan kadar leukosit esterase dan kadar nitrit di urin pada pasien ISK di RS PKU Muhammadiyah Yogyakarta.

Metode Penelitian : Penelitian ini menghubungkan kadar leukosit esterase dan kadar nitrit di urin pada pasien ISK dengan sampel sebanyak 87. Jenis penelitian ini adalah observasional analitik. Pengambilan data yang digunakan dengan cara retrospektif dengan pendekatan cross sectional. Setelah data didapatkan kemudian dilakukan uji statistik dengan uji *chi-square*.

Hasil Penelitian : Hasil dari penelitian ini didapatkan Kadar leukosit esterase yang positif pada pasien ISK adalah 56,32% dan kadar leukosit esterase negatif 43,68%. Kadar nitrit yang positif pada pasien ISK adalah 18,39% dan kadar nitrit negatif 81,61%. Pada penelitian ini terdapat hubungan yang signifikan antara kadar leukosit esterase dan kadar nitrit di urin pada pasien ISK. ($p < 0,05$).

Mathematical Analysis of the Problem

The first step in the analysis is to identify the variables and parameters involved in the problem. These include the independent variables, the dependent variables, and the parameters that define the system. The next step is to formulate the mathematical model that describes the problem. This model is typically expressed as a set of equations or inequalities that relate the variables and parameters.

The mathematical model is then solved using various techniques, such as analytical methods, numerical methods, or optimization techniques. The solution of the model provides the values of the dependent variables for given values of the independent variables and parameters. The solution is then analyzed to determine the behavior of the system and to identify any trends or patterns. The final step in the analysis is to interpret the results of the solution in the context of the problem and to draw conclusions based on the findings.

The analysis of the problem is a complex task that requires a deep understanding of the underlying mathematics and a careful attention to detail. It is essential to ensure that the mathematical model is correctly formulated and that the solution is accurately calculated. The results of the analysis should be presented in a clear and concise manner, and the conclusions should be supported by the evidence provided by the solution.

The analysis of the problem is a critical component of the overall process of problem-solving. It provides a systematic and rigorous approach to understanding the problem and to finding a solution. The results of the analysis are essential for making informed decisions and for identifying the best course of action.

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The Correlation Between Leukocyte Esterase Level and Nitrit Level on Urine in Urinary Tract Infection Patient

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ABSTRACT

Background : Urinary Tract Infection (UTI) is the cause urosepsis which is the largest cause of sepsis after a respiratory infection. UTI attack patients of all ages from infants to the elderly. Asymptomatic bacteriuria in women aged 18-40 years was 5-6% and that figure increased to 20% in older women, it is pointed out the existence of leukocyte esterase and nitrite levels are positive. Leukocyte esterase is a marker of inflammation or pyuria in the urinary tract. While the presence of nitrite in the urine, as a marker of bacteriuria. This study uses a urine dipstick for leukocyte esterase and determine levels of nitrite levels in urine to diagnose UTI.

Purpose : To know correlation between leukocyte esterase level and nitrit level on urine in urinary tract infection patient.

Method : This research to corelate levels of leukocyte esterase and nitrite levels on urine in patients with UTI as many as 87 samples. This type of observational study is analytic. Retrieval of data used by a retrospective cross sectional approach. After the data obtained was then performed statistical tests with chi-square test.

Result : The results of this study found that levels of leukocyte esterase positive in patients with UTI was 56,32% and the levels of leukocyte esterase negative 43,68%. Positive nitrite levels in patients with UTI was 18,39 % and 81,61% levels of nitrite negative.

Conclusion : In this study there is a significant relationship between levels of leukocyte esterase and nitrite levels on urine in patients with UTI. ($p < 0.05$).

