Plagiarism Checker X Originality Report

Similarity Found: 6%

Date: Wednesday, October 02, 2019
Statistics: 200 words Plagiarized / 3447 Total words
Remarks: Low Plagiarism Detected - Your Document needs Optional Improvement.

International Journal of Sciences: Basic and Applied Research (IJSBAR) ISSN 2307-4531 (Print & Online) http://gssrr.org/index.php?journal=JournalOfBasicAndApplied
---
---------- 159 Comparison of Counting Examination of Calculated Leukocytes with 100 and 300 Cell on Leukocytosis Patients Nurlia Naim * Health Analyst Department, Health Polytechnic, Ministry of Health, Makassar Indonesia Email: nurlianaim0416@gmail.com Abstract This study background that the importance of using manual methods Swabs Blood Bank at the examination counts of leukocytes were counted with 100 and 300 cells, which in this study both methods counts will be compared for each type of leukocytes that includes Basophils, Eosinophils, Neutrophils Trunk, Segment neutrophils, lymphocytes, and monocytes.

This study aims to examine the types of leukocytes contained in the blood of pa tients leukocytosis that observational laboratory with sampling technique accidental sampling as many as 10 samples. Based on the results of research in the Laboratory of the Department of Health Analysis polytechnic MoH Makassar, the data obtained from 10 samples t smaller than t table Ho who has an accepted meaning indicating that there was no significant difference between the methods of counts of 100 and 300 cells.

With, looking at the results, it is suggested to further researchers to study leukocyte c ount with an advanced method that is 500 cells in patients with leukemia. Keywords: Calculation results; Calculated leukocytes; Leukocytosis patients. 1. Introduction Generally, the diagnosis of an illness made based on symptoms (complaints and signs), which directs the doctor on the possible causes of a disease.

---------- * Corresponding

author. International Journal of Sciences: Basic and Applied Research (IJSBAR) (2016) Volume 29, No 2, pp 159-167 160 In making a diagnosis of the disease, particularly at the beginning of the disease, the clinical symptoms of the cause is still a possibility, though doctors usually can assign the highest probability, therefore, at the initial stage doctors are not always able to determine the diagnosis of disease and accurately.

Required a variety of additional data, supporting one of them the results of laboratory tests and other investigations [1]. Blood smear examination Bank (ADT) is one type of manual checks are still used to day in supporting hematology test results. Objective test preparation ADT is looking into the possibility of disease (suspected disease) due to both a primary or secondary hematologic abnormalities due to other systemic diseases.

Some information can be obtained from observations of this preparation, which makes the indication of the test smear is looking at the morphology and distribution of blood cells, saw the presence of parasites such as malaria, supporting assurance forms of anemia based on morphology, check the results of routine blood tests, and check out the count of leukocytes which in practice is done in conjunction with preparation of evaluation ADT [2].

When the number of leukocytes over the reference value, then the condition is called leukocyt osis. Leukocytosis may occur in physiological and pathological. Leukocytosis were found in physiological heavy physical labor, emotional disturbances, seizures, paroxysmal takhikardi, parturition and menstruation. Leukocytosis that occur as a result of increased balance of each type of cell, called Balance leukocytosis.

For microscopic examination counts of leukocytes, reading is usually calculated by 100 cells, but in certain circumstances count leukocyte count with 200, 300, and 500 cells because it is very necessary for confirmatory tests, correction of the results and support the laboratory results using a hematology automatic , Due to the fact the results of Differential count (Count Type leukocytes) in automatic hematology instruments sometimes reading all the other young cells that have a nucleus, and are similar to leukocytes, so often obtained results of the leukocyte cell types memorable imprecise and inaccurate.

Therefore, it is necessary inspection manual method of leukocyte count as a point of comparison and confirmation of the results of the examination using automatic tools. Besides other uses of the examination counts manually or ADT can help to distinguish between young and old cell cells so that each cell count performed (200, 300, and 500 cells), the better to assist and reinforce the diagnosis.

Based on the description above problems, it is necessary to study the comparative examination of leukocytes counted by 100 and 300 cells in patients with leukocytosis. 2. Research Methods 2.1. Types of Research This type of research is observational laboratory which is comparative to the results of the leukocyte count is calculated with 100 and 300 cells in patients with leukocytosis. 2.2 . Study Design This study was conducted cross sectional sample of 10, where the data collection or observation only once. 2.3.

Description of Operations International Journal of Sciences: Basic and Applied Research (IJSBAR) (2016) Volume 29, No 2, pp 159-167 161 1. Blood is a liquid that is essential for humans because it serves as a means of transportation as well as having many uses to support life. 2. The leukocytes is one of the blood cells contained in the body which have a function to the body's defense against infiltration and exposure to foreign substances.

3. Leukocytosis is a condition where one type of cells of leukocytes increased. 4. Calculate leukocyte consist of cells basophils, eosinophils, neutrophils (consisting of neutrophils and neutrophil rod segments), monocytes and lymphocytes. Calculate the leukocyte count at 100 cells and 300 cells. 2.4. Population, Sample and Sampling Techniques 1.

Population The population in this study are patients with leukocytosis. 2. Sample Took 10 samples of venous blood from the patient population with the criteria of leukocytosis on outpatient and inpatient who are undergoing treatment. 3. Sampling Process Cleaning the hand that will have blood drawn right cubital fossa vein section with an alcohol swab was left to dry.

After that install torniquet three fingers above the crease of the elbow. Installation tourniquet should not be more than 1 minute, this keeps the hemokonsentrasi for venous blood sampling the patient is asked to open and close the hand grip several times. Stressful part of the skin over the vein with the fingers of the left hand so that the veins do not move.

Puncture the vein with a syringe, the needle hole fa cing upwards at an angle between the needle and the skin 15o. Removing or tourniquet stretch slowly and pulled a suction syringe to obtain the desired amount of blood. Then put a dry cotton swab over the needle and needle is slowly withdrawn and then pressed a needle marks a moment with cotton.

Move blood from the syringe into the container and then disposed the spoit [7, 8]. b.

Making way Swabs Blood Bank (Differential Count) Shed one drop of capillary or venous blood in the middle of the glass object. Laying the glass objects that persist in the blood drop on a table or flat surface.

To make thin preparations download new glass objects, attach the ends to the drop of blood unt il the kesil blood spread along the glass object. With a 45o angle sliding glass objects are rapidly towards the opposite, so we get a clear preparation (such as the shape of the tongue). Then label / label made on the base of blood clots with a pencil. D rying the preparations must be done slowly in place flat.

Once dry, the blood must immediately be colored on the circumstances did not allow it within the next 24 International Journal of Sciences: Basic and Applied Research (IJSBAR) (2016) Volume 29, No 2, pp 159-167 162 hours until the need is already colored. c. Blood staining preparations fixate the preparations that have been dried with methanol then put on the shelf preparation of blood staining the position is above.

Then, prepare a 3% Giemsa solution by mixing 3 ml Giemsa stock with 97 ml of buffer solution. Pour 3% Giemsa solution at the edges to cover the entire surface of the glass object and then let the preparation for 30- 45 minutes. After that, pour water slowly from the edge of the glass object until the solution is clear Giemsa wasted.

Remove and dry preparations after checking preparations after dry . d. Use of Microscope Turning on the microscope and then put the blood on the table microscope preparations and dripping oil emersion. Using an objective lens with a magnification of 100x, raise or open diaphragm condenser lens and microscope table should be flat.

Readings starting from the thin blood smear, then began counting the leukocyte cell types. To calculate the 100 types of cells, cell identification starting from one side to move to the other side, then back to the original side with zig -zag directions within ± 3 field of view. To simplify the calculation, then made a box counting of leukocytes.

Leukocyte early visible entered in column 1, when the number of cells has been 10 moved to the 2. Each column contains 10 cells that have been identified, and if all 10 columns have been filled means that already 100 leukocytes were identified and quantified. To count of 300 cell types of the treatment is the same with counts of 100 cells, leukocytes identified only counted up to 300 cells per cell and the total number of leukocytes were divided into three in order to obtain the amount.

Thus it can be seen if there is a difference between the count leukocyte counts of 100 and 300 cells. The last step to clean the objective lens 100x with Xylol, then turn off all

the devices after use. H. hypothesis Ho: There is no difference in the results of leukocyte cell count is calculated with 100 and 300 cells in patients with leukocytosis.

Ha: There is a difference in the results of leukocyte cell count is calculated with 100 and 300 cells in patients with leukocytosis. I. Analysis of Data Data results of the count of leukocytes which include basophils, eosinophils, neutrophils rod, neutrophils segment, lymphocytes, and monocytes were tabulated, analyzed using t -test two samples associated (paired t test) and SPSS where the 95% confidence level with a significance level 0:05 . 3.

Results The study was conducted on October 9 to October 15 at the Laboratory of the Department of Health Analyst International Journal of Sciences: Basic and Applied Research (IJSBAR) (2016) Volume 29, No 2, pp 159-167 163 polytechnic campus, Makassar, the number of samples tested by 10 samples. Table 1: Results Calculate Type leukocytes counted by 100 and 300 cells in patients with leukocytosis Samples Leukocyte (%) Basof il Eosinofil Neutrofil Batang Neutrofil Segmen Limfosit Monosit 1 00 sel 3 00 sel 1 00 sel 3 00 sel 1 00 sel 3 00 sel 1 00 sel 3 00 sel 1 00 sel 3 00 sel 1 00 sel 3 00 sel 1 0 0 2 2 5 6 82 83 7 9 4 2 2 0 0 6 6 12 12 71 72 9 9 2 2 3 0 0 2 2 3 3 77 78 14 15 3 3 4 0 0 3 2 3 3 81 80 13 12 1 2 5 0 0 3 2 2 2 88 87 7 6 1 2 6 0 0 0 1 3 3 97 94 0 2 0 0 7 0 0 0 1 3 3 88 88 8 7 1 1 8 0 0 1 1 3 4 87 87 8 7 1 1 9 0 0 2 1 1 1 93 92 5 5 0 0 10 0 0 2 1 4 5 88 87 7 6 0 0 Table 2: Results count T count Eosinophils Test statistics were calculated with 100 and 300 cells in patients with leukocytosis Counted Leukosit N SD T count T tabl e 100 c el ls 10 0.7889 0.802 2.262 300 cells 10 Table 3: Results count test statistic T Neutrophil count stems are calculated with 100 and 300 cells in patients with leukocytosis Counted Leukosit N SD T count T table 100 cells 10 0.4830 1.964 2.262 300 cells 10 International Journal of Sciences: Basic and Applied Research (IJSBAR) (2016) Volume 29, No 2, pp 159-167 164 Table 4: Results of statistical count T count Neutrophils Test Segment is calculated with 100 and 300 cells in patients with leukocytosis Counted Leukosit N SD T count T tab l e 100 cells 10 1.2649 1.000 2.262 300 cells 10 Table 5: Results count test statistic T lymphocyte count is calculated with 100 and 300 cells in patients with leukocytosis Counted Leukosit N SD T count T tabl e 100 cells 10 1.2471 0.000 2.262 300 cells 10 Table 6: Results of test statistics count T count Monocytes are calculated with 100 and 300 cells in patients with leukocytosis Counted Leukosit N SD T count T tab l e 100 cells 10 0.8164 0.000 2.262 300 cells 10 Based on Table 2 shows that t of Eosinophils smaller than t table, Table 4.3

shows that t of Neutrophils rod is smaller than t table, Table 4.4 shows that t of Neutrophil segment is smaller than t table, Table 4.5 shows that t Lymphocyte count of less than t table, and 4.6 shows that t of rod neutrophils are smaller than t table, where each at a 95% confidence level. In this case the Ho accepted means there is no

significant difference between the results of the cell count Eosinophils, Neutrophils Trunk, Neutrophil segment, lymphocytes, and monocytes were calculated with 100 and 300 cells in patients with leukocytosis. 4.

Discussion Based on the results of research conducted at the Laboratory of the Department of Health Analyst polytechnic campus MoH Makassar on October 9 until October 15, 2015 showed no significant differences in the results of leukocyte count is calculated with 100 and 300 cells in patients with leukocytosis. From table shows that of the 10 samples of patients leukocytosis examined the ADT using counts of 100 and 300 cells found the number of standard deviations of each Eosinophils (0.7889), neutrophil Trunk (0.4830), neutrophil Segment (1.2649), lymphocytes (1.2471), and monocytes (0.8164).

International Journal of Sciences: Basic and Applied Research (IJSBAR) (2016) Volume 29, No 2, pp 159-167 165 The statistical results of the significance level 0:05 obtained t count each cell leukocytes include Eosinophils (0802), Neutrophils Trunk (1964), Neutrophils Segment (1000), Lymphocytes (0000), and monocytes (0.000) is smaller than t table (2,262) which means that Ho is accepted where the result of leukocyte count is calculated with 100 and 300 cells in patients leukocytosis no significant difference.

Due to the statistical calculations of both methods do not have significant differences, it shows that these two methods can be used simultaneously in certain circumstances. Especially for the condit ion of the body is exposed to all sorts of infections that cause increased leukocyte such as bacterial infections, viruses, parasites, and so it counts advanced methods such as the method 300 cells are needed.

And as for other conditions that may cause leu kocytosis ie hemolytic anemia, cirrhosis of the liver with necrosis, emotional and physical stress (including trauma and exhausted exercise) as well as the poisoning of properties [9, 10, 11]. Although on examination in the laboratory methods count of leuk ocytes with 100 cells is the standard tests used for confirmatory tests Differential count is checked by the tool, but the method counts 300 cells remains to be done for as a comparison with the method 100 cells for further correction results if there are differences as well as those found in this study.

This is needed because in reality hematology instrument automatics read all nucleated cells other than leukocytes, so often produce meaningful examination results leukocytes high. Therefore, a manual method as leukocyte count by the method of calculation of 100, 300, and 500 of these cells is still needed as a test of support for diagnosis in the laboratory. In this study, the sample used is EDTA blood from patients who later made the ADT leukocytosis.

In pr inciple, these two methods are the same, namely to perform Giemsa staining with dilution of 1: 9 with a pH 6.4 buffer solution (pH 6.4 or distilled water) after it has been dried swabs fixed with methanol on the slide and dripped a solution of Giemsa in on preparations until completely covered by the Giemsa solution, and left to stand for 30 minutes, after which the preparation is rinsed with distilled water, then dried preparations in a vertical position and then read on a microscope with a magnification of 100 times using oil emersi on.

The thing that must be considered in this examination so that results can be maximized, namely tools and materials as well as ways to correct in the manufacture of ADT. For the first step prepared glass slide, dry, dust - free and fat-free. Then dripped blood on a glass slide approximately 1- 2 cm from one end, preferably the blood droplet diameter ± 1 cm in touch on the glass slider to the last drop of blood, immediately to the left of the glass slide with a slope angle 30 -45° and left stocks dried in the air.

Checking perfomed lear begins with preparation that has not been polished. After the first check daubed with wearing ocular microscope 10x and 10x objective anyway. Notice in preparation inspected there a good part, the part that is quite thin and flat everywhere erythrocyte close enough together without clumping. Note also the quality of outward appearance, well, pale, or too old. Glass objects to be used must be dry, dust -free and fat-free [12, 13] .

The preparation is not widened until to the slide, the length of 1/2 to 2/3 the length of the glass. In preparation there should be thin enough parts to be examined: in this section is located adjacent erythrocytes -red cells with no overlap and no make up clots. Average edge of the preparation should not be pitted or striped.

Deployment should not be bad erythrocyte, leukocyte -leukocyte it should not be assembled on the edges or ends of the International Journal of Sciences: Basic and Applied Research (IJSBAR) (2016) Volume 29, No 2, pp 159-167 166 preparations. And note also the factors that may affect the results of such reagents and samples used if it meets the criteria of the inspection, the inspection process is the appropriate procedures, as well as the competence and skills of health workers in examinations so as to provide accurate and reliable results. 5.

Conclusions and Recommendations 5.1 Conclusion According to the research done, it can be concluded that: 1. There were no significant differences in the results of the examination cell count Eosinophils are calculated with 100 and 300 cells in patients with leukocytosis. 2.

There is no significant difference in the results of the examination results Stem cell count of neutrophils, which are calculated with 100 and 300 cells in patients with leukocytosis. 3. There are no significant differences in the result s of the examination results neutrophil cell count Segment is calculated with 100 and 300 cells in patients with leukocytosis. 4.

There is no significant difference in the results of the examination results lymphocyte cell count is calculated with 100 and 300 cells in patients with leukocytosis. 5. There is no significant difference in the results of the examination results Monocytes cell count is calculated with 100 and 300 cells in patients with leukocytosis. 5.2 Suggestions Based on the conclusion above, the writer can suggest: 1.

Although the actual examination of the methods already counts 100 cells represent the whole cell picture on ADT, but examination of leukocyte count with differential count of 300 cells method can still be used simultaneously in certain circumstances for confirmatory tests and test examination for patient support especially leukocytosis. 2. To the researchers next need to do further research using the method proceeds to the method counts 500 cells in patients with leukemia types.

References [1] Anonim, 2005. Atlas sel -sel darah, JICA. Jakarta. [2] Hardjoeno, H. 2007. Interpretasi Hasil Tes Laboratorium Klinik Diagnostik. Dian Rakyat. Jakarta. International Journal of Sciences: Basic and Applied Research (IJSBAR) (2016) Volume 29, No 2, pp 159-167 167 [3] Bakta IM. 2006. Hematologi Klinik Ringkas. EGC. Jakarta [4] Hoffbrand,. 2006. Kapita Selekta Hematologi Edisi 4, EGC, Jakarta [5] http://drdjebrut.wordpress.com/2012/02/01/hapusan-darah-pada-leukemia-mieloid-kronis- cml/ (Diakses pada 22 September 2015) [6] http://yullyanalis.wordpress.com/2013/06/28/hitung -jenis-leukosdifferential-count-dan evaluasi-hapusan- darah-tepi-hdt/ [7] Notoatmodjo S. 2010. Metode Penelitian Kesehatan, PT. Rieneke Cipta, Jakarta.

[8] Gandasoebrata, R. 2006. Penuntun Laboratorium Klinik. Dian Rakyat. Jakarta. [9] A Sacher. 2004. Tinjauan Klinis Hasil Pemeriksaan Laboratorium, EGC, Jakarta. [10] Sutedjo, AY. 2006. Mengenal Penyakit Melalui Hasil PemeriksaanLaboratorium,amara Books. Yogyakarta. [11] Handayani, W. 2008. Asuhan Keperawatan Pada Klien Dengan Gangguan Sistem Hematologi. Jakarta. [12] http://geogle.co.id/pengertian darah (Diakses pada 12 September 2015). [13] http://biozeronine.blogspot.com/2010/05/hemopoiesis.html (Diakses pada 20 September 2015) (Diakses pada 22 September 2015)

INTERNET SOURCES:

<1% - https://www.researchgate.net/journal/2307-4531_International_Journal_of_Sciences_Basic_and_Applied_Research_IJSBAR
<1% - https://www.researchgate.net/publication/8559594_Rituximab_as_Treatment_for_Refractory_Kidney_Transplant_Rejection
<1% - http://www.ijstr.org/research-paper-publishing.php?month=july2019
<1% - https://www.researchgate.net/publication/309514155_Determination_of_OD_Value_and_CFU_Dilution_for_Modeling_the_Infection_of_Vulvovaginal_Candidiasis_on_Experimental_Mice
<1% - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4485186/
<1% - https://www.labcorp.com/help/patient-test-info/platelet-function-tests
<1% - https://factdr.com/health-conditions/leukocytosis/
<1% - http://myweb.sabanciuniv.edu/rdehkharghani/files/2016/02/The-Morgan-Kaufmann-Series-in-Data-Management-Systems-Jiawei-Han-Micheline-Kamber-Jian-Pei-Data-Mining.-Concepts-and-Techniques-3rd-Edition-Morgan-Kaufmann-2011.pdf
<1% - https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-018-5733-x
<1% - https://profiles.uonbi.ac.ke/eddgsibota/publications?page=6
<1% - https://www.researchgate.net/publication/38042052_Neutrophils_and_Asthma
<1% - http://docshare.tips/blood-bankingpdf_574b450fb6d87fa21f8b4e7b.html
<1% - https://quizlet.com/120558132/venipuncture-flash-cards/
<1% - http://helid.digicollection.org/en/d/Jwho02e/7.html
<1% - https://www.yorkton.ca/livinghere/springrunoff/pdf/SK_cleaning_up_after_the_flood.pdf
<1% - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4348664/
<1% - https://quizlet.com/144899090/microbiology-lp2-draft-from-lp1-flash-cards/
<1% - https://quizlet.com/62906395/intro-to-statistics-class-140-csun-flash-cards/
<1% - https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0043702
<1% - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4974469/
<1% - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4166255/
<1% - https://www.researchgate.net/publication/221841423_Delayed_Type_of_Asthmatic_Response_to_Allergen_Challenge_and_Cytokines_in_the_Peripheral_Blood
<1% - https://schools-colleges-universities.blogspot.com/
<1% - https://www.ahajournals.org/doi/10.1161/01.CIR.0000060487.15126.56
<1% -

https://www.researchgate.net/publication/296196409_Acne_Vulgaris_Awareness_and_Impact_on_Quality_of_Life_and_Psychological_Status_of_Adolescent_School_Children_in
<1% -
https://news.stanford.edu/news/2009/august24/multitask-research-study-082409.html
<1% -
https://quizlet.com/49808947/2-7-preparing-and-staining-a-blood-smear-flash-cards/
<1% - https://www.westgard.com/lesson11.htm
<1% -
http://studentsrepo.um.edu.my/3921/6/CHAPTER_5_%E2%80%93_CONCLUSIONS_%26_RECOMMENDATIONS.pdf
<1% - http://jpp.krakow.pl/journal/archive/12_08_s6/pdf/261_12_08_s6_article.pdf
<1% - https://stemcellsjournals.onlinelibrary.wiley.com/doi/full/10.1002/sctm.17-0043
<1% - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3781604/
<1% - http://a-research.upi.edu/operator/upload/t_bing_1004986_chapter5.pdf
<1% -
http://digilib.unimus.ac.id/files/disk1/126/jtptunimus-gdl-sriwahyuni-6255-4-daftarp-a.pdf
<1% - http://repository.unimus.ac.id/480/7/DAFTAR%20PUSTAKA.pdf
<1% -
https://www.scribd.com/document/367524298/Pengaruh-Penundaan-Waktu-Pemeriksaan-Terhadap-Jumlah-Eritrosit
<1% -
http://repository.usu.ac.id/bitstream/handle/123456789/50510/Reference.pdf;sequence=2