

Clinical use of a modified flow cytometry method for the analysis of a selected urine particle in urine samples collected from hospitalized patients

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Extended Abstract

Abstract

Statement of the problem: chemical analysis, aboard general blood tests, is one in all the foremost oftentimes screening tests within the clinical laboratory. weewee check encompasses a key role in identification and observance nephrological and urological disorders, however conjointly permits observance of haemostasis of the full organism. Routine chemical analysis thought of as sediment analysis consists in deciding the content of morphological parts like white corpuscle, RBC, yeasts, casts etc. weewee culture represents a gold commonplace for the designation of tract infections (UTI) conjointly basing on the assessment of the presence of microorganism cells in weewee samples. Sysmex UF-4000 instrument delivers the chance to match the chemical analysis check and microbiological examination mistreatment the changed flow cytometry technique. This technique (time concerning five minutes) permits for the quantitative determination of cells and fashioned particles within the weewee sample. Material & Methods: 1386 consecutive weewee samples were analyzed. instrument needed a pair of cubic centimeter weewee as a minimum volume however aspirated solely 450 µl. every part passing severally by the liquid stream was analyzed by the optical system, registered and showed as a private event on dot plots. chance to rule out the negative biological science weewee and preliminary microorganism Gram '+ve' and Gram '-ve' teams were tested. 2 cutoff values were set for microorganism, the primary 58/µl and other 300/µl looking on clinical wants. Correspondingly, positive samples were 707 (51%) and for the second cutoff 466 (34%). in addition, look and quantity of white corpuscle are often helpful to approvel the infection method. Classic biological science doesn't offer such an opening. Conclusion & Significance: UF-4000 used for microbiological nosology provided new analytical features: rising the potency of the routine biological science, excluding microorganism UTI, reduced superfluous weewee culture, provides reliable leads to a shorten turn-around time and will facilitate clinicians to work out antibiotic medical care if it's necessary.

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twenty you look after patients receiving antibiotics probably had received those unnecessarily. The calculated share of false negatives was zero nada (95 the arrogance interval 0–3.3 %). Conclusions excretion flow cytometry may be a reliable screening methodology to exclude tract infections. With a cutoff worth of sixty bacteria/ μ L excretion, negative prognostic worth is 100% and therefore the calculated share of false negatives is zero nada (95 the arrogance interval 0–3.3 %). victimisation flow cytometry as a screening methodology could lead on to a discount in cultures and antibiotics. excretion samples represent an oversized proportion of samples tested in clinical biological science laboratories. Culturing of the samples is fairly time- and labor-consuming, and most of the samples can yield no growth or insignificant growth. we have a tendency to analyzed the practicableness of the flow cytometry-based UF-500i instrument (Sysmex, Japan) to separate excretion samples with no growth or insignificant growth and cut back the amount of samples to be polite. a complete of one,094 excretion specimens sent to our laboratory for culture throughout four months within the spring of 2009 in Lahti, Finland, were enclosed within the study. when culture, all samples were analyzed with the Sysmex UF-500i for microorganism and blood cell (white blood corpuscle [WBC]) counts. Youden index and highest (0,1) strategies were accustomed verify the cutoff values for microorganism and WBC counts in culture-positive and -negative teams. By flow cytometry, samples thought-about positive for UTI in culture had microorganism and WBC values that were considerably above those for samples thought-about negative. The flow cytometric screening worked best once each microorganism counts and WBC counts were used with age- and gender-specific cutoff values for all patient teams, excluding patients with urological malady or anomaly. By use of those cutoff values, 5/167 (3.0%) of culture-positive samples were lost by UF-500i and therefore the share of samples that didn't ought to be polite was sixty four.5%. Use of the UF-500i instrument may be a reliable methodology for screening out a serious a part of the UTI-negative samples, considerably decreasing the number of labor needed within the biological science laboratory.

Biography

Magdalena Szmulik work as a Product Specialist in Sysmex Poland and trained in an interpretation of hematology and urine test result. She has a background in virology and molecular method by working in a Military Blood Donation Center in Warsaw. She has studied clinical laboratory science and has completed her MSc from the Medical University of Warsaw. She has created and developed student's scientific association– Studenckie Towarzystwo Diagnostów Laboratoryjnych. She is interested of public health and an opportunity to develop health profilactic based on laboratory medicine.