8 A COMPARISON OF GLUCOMETERS USED AT KING ABDULAZIZ MEDICAL CITY, JEDDAH, 2018

Abdullah Alzahrani, Reem Alshareef, Fayssal Farahat, Anwar Borai. *Family Medicine, King Saud Benabdulaziz University for Health Science*

10.1136/bmjopen-2019-PSF.8

Background Glucometers have become a fundamental tool in measuring and monitoring glucose level, both in healthcare institutions and home care. The accuracy of glucometers affects the quality of management of diabetic patients and is associated with the occurrence of over-treating or under-treating accidents due to inaccurate readings. This study assessed the accuracy of five commercially available glucometers by reference to laboratory venous plasma glucose (PG) measurement.

Methods A cross-sectional study was conducted among patients with diabetes attending King Abdulaziz Medical City laboratory. All participants underwent venipuncture regarding laboratory PG, simultaneously with capillary blood sampling, on which capillary glucose (CG) was measured using the glucometers AccuCheck®, OneTouch®, Freestyle Optium Neo®, Contour Next®, and Contour Next One® in random order. All glucometers were adequately calibrated and verified according to American Diabetes Association guidelines before use. Bias was calculated for each glucometer as the difference between CG and PG (Δ CG-PG). One-sample t-test was used to analyze mean Δ CG-PG by reference to zero for each of the glucometers. Bland-Altman analysis was undertaken by plotting Δ CG-PG against PG. Proportional bias was investigated by analyzing the relationship between Δ CG-PG and PG using linear regression.

Results A total of 203 patients were included, with mean PG 155.22 (SD 64.88) mg/dL. The coefficient of variation of the meters ranged from 37.79% to 41.80%. Mean CGs ranged from 153.01 (SD 57.82) to 163.00 (SD 64.52) depending on the glucometer. Three meters showed negative bias. Mean difference was 2.20 for AccuCheck, -2.26 for One Touch, 0.90 for Freestyle, -2.08 for Contour Next, and -7.78 for Contour Next One. Bias percentage ranged from -5.01 to 1.42. Bland-Altman plots showed proportional bias (an increase in the magnitude of the error as the test result increases). Proportional bias was supported by the significant linear regression analysis for all glucometers.

Conclusion Of all glucometers, Freestyle Optium Neo showed the minimal mean bias, while Contour Next One showed the highest proportional bias. However, all of the glucometers were within 5% difference. High blood glucose readings above 200 mg/dL should be confirmed by venous measurement.

9 BACTERIAL CONTAMINATION AND STETHOSCOPE DISINFECTION PRACTICES: A CROSS-SECTIONAL SURVEY AMONG RESIDENTS AT KING ABDULAZIZ MEDICAL CITY, WESTERN REGION OF SAUDI ARABIA, 2018

Abdullah Alzahrani, Rahaf Albensari, Fayssal Farahat, Abdulfattah Alamri. *Family Medicine, King Saud Benabdulaziz University for Health Science*

10.1136/bmjopen-2019-PSF.9

Background Although knowledge of healthcare providers regarding stethoscope care is reasonable, their practices regarding stethoscope disinfection after use have been consistently reported to be quite poor, with the results of several hospital-

based local and international studies showing a high prevalence of stethoscope contamination. The objective of this study was to assess prevalence of bacterial colonization of stethoscope diaphragms and to explore knowledge, awareness, and practices of residents in different departments.

Methods A cross-sectional study was carried out among residents at King Abdulaziz Medical City, the National Guard Hospital, Jeddah, Saudi Arabia, throughout the period 1 April to 31 May 2018. Residents of specialties with expected low stethoscope use were excluded. A 17-item valid self-administered study questionnaire was developed and used for data collection. It included personal characteristics, assessment of residents' knowledge regarding stethoscope contamination, practice of stethoscope disinfection, and residents' awareness regarding stethoscope cleaning and disinfection. The stethoscopes used by participants at the time of completing the questionnaire and their diaphragms were sampled for culture and sensitivity. When three or more colony-forming units were found on a plate, the organism was regarded as a bacterial contaminant. The isolated bacteria were assessed by colony characteristics, morphology, and Gram reaction and biochemical tests.

Results The study included 170 resident physicians. Their age ranged from 24 to 34 years with a mean of 27.1 (SD 1.7) years. 54.1% were female. The average number of hours of patient contact per 24 hours was 7.0 (SD 2.4) hours. Prevalence of bacterial colonization was 63.5% (108 of 170) whereas that of bacterial contamination was 50.6% (86 of 170). Organisms were present in nine specimens (5.3%). The most common isolated organism was *Bacillus* sp (three [33.3%] of nine). The highest rate of bacterial contamination was reported among emergency medicine residents (81.8%), whereas the lowest rate was observed among internal medicine residents (32.1%, $p=0.001$). More experienced residents were more likely to have bacterial contamination, because the mean experience of residents who showed bacterial contamination was significantly higher than others (2.72 ± 1.67 versus 2.27 ± 1.22 , $p=0.048$). Longer time since last cleaning of the stethoscope was significantly associated with bacterial contamination ($p=0.020$).

Conclusion Bacterial contamination of the stethoscope is a common problem among resident physicians, affecting almost half of them, particularly those working in the emergency department and those who had not cleaned their stethoscope for a long time. Therefore, continuing training and education to encourage resident physicians to continuously clean their stethoscope could reduce stethoscope contamination and prevent hospital-acquired infections.

10 COMPARING ANTIFUNGAL PROPHYLAXIS EFFICACY BETWEEN FLUCONAZOLE AND AMPHOTERICIN B LIPID COMPLEX IN ADULT PATIENTS WITH ACUTE LYMPHOCYTIC LEUKEMIA (ALL) RECEIVING HYPER-CVAD-BASED CHEMOTHERAPY

Afnan Yousef Alamri, Mansoor Ahmed Khan, Mohammed Aseeri, Ahmed Absi, Abdelmajid Alnatsheh. *Pharmaceutical Care, King Abdulaziz Medical City – Jeddah*

10.1136/bmjopen-2019-PSF.10

Background Fungal infection is common in acute lymphocytic leukemia (ALL), which can lead to significant mortality and morbidity. Our aim is to compare the efficacy of antifungal