overall rate of anemia, based on a stringent definition, was 27% [2]. Among patients with Staphylococcus aureus infection, 56% had a hematocrit of ≤33% at the time of referral to an infectious diseases service for consultation [3].

Maintaining a high hemoglobin level and high oxygen saturation significantly reduces the risk of progression to death for patients who have severe sepsis or septic shock [4]. We may not know the mechanism, but I do believe that a low hemoglobin concentration predisposes to acute bacterial infection, probably by means of reduced oxygen saturation at potentially infected sites.

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Daniel M. Musher

Infectious Diseases Section, Veterans’ Affairs Medical Center, and Department of Medicine, Baylor College of Medicine, Houston, Texas

**References**


Reprints or correspondence: Dr. Daniel M. Musher, Infectious Diseases Section (11/G), Veterans’ Affairs Medical Center, 2002 Holcombe Blvd., Houston, TX 77030 (daniel.musher@med.va.gov).

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**Risk Factors for Asymptomatic Bacteriuria in Women with Diabetes**

Sir—We read with interest the article by Bonadio et al. [1] that analyzed asymptomatic bacteriuria (ASB) in women with diabetes and the influence of metabolic control. Several studies confirm that there is a higher prevalence of ASB in women with diabetes than in women without diabetes. Furthermore, women with diabetes mellitus (DM) have symptomatic urinary tract infections more often than women without DM [2]. The consequences of ASB in these women are unknown. Data from earlier studies suggested that women with ASB may have an increased risk of urinary tract infection [3].

We have found very interesting the association that Bonadio et al. [1] observe...
between the impairment of metabolic control of diabetes—revealed by an increased in the glycosylated hemoglobin level (HbA1c)—and the risk of developing ASB. However, in our opinion, the number of individuals with DM enrolled in the study population was limited (52 patients with type 1 DM and 176 patients with type 2 DM), and the statistical significance was poor. In addition, Bonadio et al. [1] do not show the 95% CI. They defined ASB as the presence of ≥10^5 colony-forming units/mL in 1 culture of clean-voided midstream urine specimen. The standard criterion for ASB is having ≥2 consecutive positive urine specimens. According to this criterion, the prevalence of ASB in the study population of Bonadio et al. [1] would be <17.5%, as they comment in the discussion section. They mention that most of their patients with diabetes had disease that was well controlled, but these patients had glycated hemoglobin (HbA1c) levels of 9% and fasting blood glucose levels of 135 ± 33 mg/dL. Currently, these levels would not reflect an adequate metabolic control of disease, according to the latest European and US recommendations [4, 5].

We have carried out a prospective study involving 289 women with type 2 diabetes. The mean age (±SD) of all patients was 66.8 ± 10.2 years. We used the strict criterion of 2 consecutive positive urine culture results to define ASB. The prevalence of ASB was 25.6%, the mean HbA1c level (±SD) was 7.86% ± 1.6%, and the mean microalbuminuria level (±SD) was 1.7 ± 7.5 mg/dL. The mean duration of the disease (±SD) was 12.2 ± 9.2 years, similar to that for the patients with type 2 DM reported in Bonadio et al. [1]. In the multivariate logistical regression analysis, the degree of metabolic control, duration of diabetes, and presence of DM complications were not risk factors for the presence of ASB. Our population was homogeneous, and we identified the following additional risk factors for ASB: increased C-reactive protein levels, the presence of leucocyturia in urinary sediment, increased levels of microalbuminuria, and obesity. We have not compared our study population with a control group of individuals without diabetes. However, we think that it would be interesting to investigate these risk factors and others in the control group in Bonadio et al. [1]. It is difficult to compare the results of the different reported studies, because the patients included in them were very heterogeneous [6]. Clearly, further investigations must be conducted to determine the risk factors in the different groups, which could then be extrapolated to all patients with diabetes, and to identify the population that could benefit from treatment of ASB.

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Maria del Carmen Riber Montes, Reyes Pascual Perez, Carlos Perez Barba, Domingo Orozco Beltran, and Victor Pedre Carbone
Department of Internal Medicine, General Hospital of Elda, Miguel Hernandez University, Alicante, Spain

References


Reply to Riber Montes et al.

Sir—We have read with interest the letter of Riber Montes et al. [1]. In response to the authors’ comments on our article [2], we note that, in contrast with recent observations [3] (but not with older studies [4]), the frequency of asymptomatic bacteriuria (ASB) was similar in women with and without diabetes, as was found in our study. In addition, a significantly higher mean level of glycosylated hemoglobin (HbA1c) was demonstrated in women with type 2 diabetes who had ASB, compared with women with diabetes who did not have ASB [2]. With regard to the HbA1c confidence interval, the differences between the groups mean values and upper, and lower confidence intervals (P< .05) were 0.7, 1.4, and 0.005, respectively.

The authors of the letter [1] reported a prevalence of ASB of 25.6% in their cohort of women with type 2 diabetes using the criterion of 2 consecutive positive urine culture results. This rate of ASB is much higher than that reported in other studies that used the same criteria in defining ASB [5] and is higher than the rate observed in our study [2], in which a single positive result of a urine culture of a clean-voided midstream urine sample was used. This difference could be explained by hypothesizing additional risk factors for ASB in the population in the study by Riber Montes’ et al. [1]—for example, how many women with indwelling bladder catheter or recent vesical catheterization were included in their study?

Regarding the metabolic control of disease in the women with diabetes in our study, we state that ~50% of our patients had HbA1c values of ≤8.5%. In 1997, when we started the study, an HbA1c value of 7%–8.5% had been suggested as the ideal realistic therapeutic window [6]. The method we used for HbA1c assay was high-performance liquid chromatography (HPLC); the authors of the letter [1] have not indicated whether they used the same method or an immunological method. Some discrepancies have been reported in