Asymptomatic bacteriuria—clinical significance and management

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Introduction

The term asymptomatic bacteriuria (AB) refers to the presence of two consecutive clean-voided urine specimens both yielding positive cultures (≥10^5 c.f.u./ml) of the same uropathogens, in a patient without urinary symptoms [1]. The clinical significance and management of AB differs according to different groups of patients. Table 1 summarizes the management of patients with AB.

Prevalence, clinical significance and management

AB occurs in about 1–2% of preschool girls, and 5% of girls by the age of 15, but is negligible in boys with the exception of those occurring during the first months of life. AB in children without vesicourethral reflux or obstruction is a benign condition with regard to renal growth and function [3]. Most renal damage from bacteriuria occurs during the first five years of life and progression is rare. In school girls with AB and without urologic abnormalities, antimicrobials are not indicated [4].

The prevalence of AB in healthy non-pregnant women is approximately 5% [5]. AB in non-pregnant women without urological abnormalities rarely causes renal damage; permanent eradication is difficult, time-consuming, costly and potentially hazardous. Therefore, antibiotics in this group of patients are not recommended [4].

The prevalence of AB in pregnant women is similar to those in non-pregnant women [6]. However 20–40% of untreated pregnant women with AB will develop pyelonephritis [7], which may lead to prematurity and low-birth-weight infants. Antibiotic treatment of AB lowers the incidence of pyelonephritis to 3% [8].

AB is more frequent in diabetic women than in non-diabetic women [4]. Half of all diabetic patients with bacteriuria had renal involvement [9]; however, the majority of them are asymptomatic. Clinical trials dealing with the treatment of AB in diabetes are limited [10] and many questions remain unanswered, for example: (i) what are the consequences of untreated AB; (ii) should attempts to eradicate bacteriuria be undertaken? Despite the absence of data about the rate of potential complications of AB in diabetic patients, due to the potential danger of AB leading to complicated upper infection, such as perinephric abscess, papillary necrosis etc., we recommend trying, at least, one course of antibiotics in order to try to sterilize the urine.

The prevalence of AB in elderly women ranges from 17 to 50% and 6 to 34% in men [11]. There is general agreement in the literature that AB in the elderly does not contribute to mortality [11], or to renal damage or hypertension [12,13]. Therefore, in the absence of urologic obstruction, AB in elderly is a benign condition that does not require treatment.

The prevalence of AB in males from infancy to 50 years of age is rare. After the age of 50, there is an increase as a result of prostatic problems. However, although there are no conclusive data for AB in men, several conclusions can be obtained: AB in men does not impair renal function or cause hypertension and antibiotics reduce the number of symptomatic episodes [14].

Conclusions

The clinical significance and management of AB differs according to different groups of patients. Special care

Table 1. Indications for the treatment of patients with asymptomatic bacteriuria

<table>
<thead>
<tr>
<th>Definitive</th>
<th>Possible</th>
<th>Not indicated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy</td>
<td>Diabetes mellitus</td>
<td>Elderly</td>
</tr>
<tr>
<td>Before an invasive genitourinary procedure</td>
<td>Short-term indwelling catheterization</td>
<td>School girls and premenopausal women</td>
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<tr>
<td>School girls and premenopausal women</td>
<td>Intermittent indwelling catheterization</td>
<td>Children with reflux</td>
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<tr>
<td>Renal transplant</td>
<td>Long-term indwelling catheter</td>
<td>Patients with abnormal urinary tract</td>
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must be taken in pregnant women and patients with factors predisposing renal damage.

References