Oral contraceptives, ABO blood types and thromboembolism

An interesting article in CMAJ by Sode and colleagues reported that in groups of patients with increased susceptibility to thromboembolic disease because of factor V Leiden R 5062 or prothrombin mutation G 20210A, the highest incidence of disease occurred in patients with A, B or AB blood types. In previous studies, we reported that among 348 women treated with various oral contraceptive agents and observed for 5877 months, thromboembolic complications occurred only in patients with preexisting blood coagulation deficiencies, but all patients had A or AB blood types.

The coagulation deficiencies we observed produced no clinical problems until oral contraceptives were initiated. Abnormalities included increased levels of factors V, VII, VIII, II (prothrombin) or its mutations or decreased levels of plasminogen or combinations of these pathologies. The question is whether patients should be tested for factors of the blood coagulation and fibrinolysis systems as well as blood groups before starting oral contraceptive therapy. Although the incidence of thromboembolism in these patients is relatively low, and the tests are expensive, the potential of serious complications in otherwise healthy women may warrant testing. Positive findings may justify otherwise healthy women may warrant testing. Positive findings may justify consideration of other methods of pregnancy prevention, or of the use of oral contraceptives with the lowest estrogen concentrations, which have the lowest risk of thromboembolic complications.

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Guidelines and public consultations

In response to the CMAJ commentary by Chatterjee and colleagues, we at BC Guidelines wish to inform the authors that we have used their suggested method of public consultation for our guidelines for the past 10 years.

BCGuidelines.ca is overseen by the Guidelines and Protocols Advisory Committee (GPAC), a joint committee of the BC Medical Association and the British Columbia Ministry of Health. New and revised guidelines are subject to an external peer review to ensure guidelines are clearly written, appropriate, practical, and free from serious oversights or errors.

Each guideline is written by a working group of general practitioners, relevant specialists, a pharmacist and a research officer. The working group reviews current evidence and drafts the guideline, which is reviewed internally by GPAC and then sent for external review. The external review consists of mailing the guideline and accompanying questionnaire to a random sample of general practitioners (between 400 and 800 individuals), relevant specialties (10%–20% sample per specialty) that include nurse practitioners, other allied health professionals and stakeholders. The stakeholders are key contacts in the areas of pharmacy, laboratory procedures, health authorities, medical services plan billing, public health and health professional colleges and associations.

The questionnaire consists of approximately 10 questions that address clarity, applicability, utilization and overall assessment. Space is given for open-ended comments. The feedback from the external review is discussed by the working group, and any necessary changes are made. Before a guideline can be finalized by GPAC and the Medical Services Commission of British Columbia, the feedback received from the external review must be reconciled.

Further information about BC Guidelines can be found at BCGuidelines.ca or hlhs.guidelines@gov.bc.ca.

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BC Medical Association, Guidelines and Protocols Advisory Committee CoChair (Dalal); and British Columbia Ministry of Health, Guidelines and Protocols Advisory Committee CoChair (Power).

Reference

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Interpreting positive urine cultures

On behalf of emergency physicians at Hamilton Health Sciences, we are compelled to respond to an article that appeared in the practice section of CMAJ. In a survey of our colleagues, 29 out of 30 respondents believed that the patient in the article by Vaisman and colleagues had a urinary tract infection. Only 1 respondent thought that the positive culture represented asymptomatic bacteriuria.

Because of the high mortality rate due to bacterial infection among older adults, and because systemic inflammatory response syndrome and septic shock were the most immediate and life-threatening possible diagnoses, most physicians would have likely treated the patient with antibiotics upon presentation.

Of the studies cited in the CMAJ article, one was a qualitative (i.e., tape-recorded interview) study of nurses and doctors describing their diagnostic and prescribing practices concerning bacteriuria within a nursing home setting, another was a self-report study from 1987 of 72 elderly participants’ (59 women and 13 men) symptoms and urine culture results, in which there was no control for cognitive ability to describe symptoms.
Vaisman and colleagues\(^1\) justify their decision to deny the patient antibiotic therapy based on prevalence-biased diagnostic measures, low probability of disease in a different (i.e., otherwise healthy) population and by retrodictive inference.

Because the patient presented in a shock state with evidence of urosepsis, she required immediate treatment for sepsis, including antibiotics, and, in our opinion, treating her otherwise was unacceptable.

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The authors respond
We thank Ackerman and colleagues\(^1\) for their discussion related to our article\(^1\) and for taking the time to poll their colleagues on how they would have managed the patient in the clinical scenario. Interpretation of positive urine culture results has long been the subject of passionate debate in the literature.\(^3\)

Because we believe that a change in clinical practice regarding urine culture test ordering and management of positive results is needed, we are encouraged that our article has stimulated a healthy discussion on the issue.

We agree with the use of early empiric antibiotic therapy in reducing mortality due to sepsis; however, in the scenario presented, the patient did not meet criteria for sepsis.\(^4\) Furthermore, an alternate explanation existed for the patient’s hypotension and tachycardia, namely hypovolemia secondary to gastrointestinal fluid losses. Although the patient had a fever 3 days before presentation, it was self-limited and there was an alternate explanation — her diarrheal illness in the setting of an institutional outbreak. This also showed that she could mount a febrile response in the event of an infection. Therefore, we disagree with Ackerman and colleagues\(^1\) conclusion that the patient had systemic inflammatory response syndrome (SIRS) and septic shock and required early antibiotic therapy.

If the patient had met the case definition for SIRS and sepsis, an additional point to highlight would be that older adults with sepsis without urinary symptoms should not be assumed to have a urinary infection based on findings of urinalysis or culture results, because this may lead to early diagnostic closure and a failure to investigate and treat for other causes of infection.

Bacteriuria is present in up to 50% of elderly women in long-term care facilities; and 90% of those patients have pyuria.\(^5\) Therefore, these abnormalities should not constitute a urinary tract infection diagnosis in a patient who can reliably report the presence or absence of urinary symptoms, as in the case presented.\(^2\)

Our case highlights the importance of appreciating clinical context when both ordering urine cultures and interpreting results. In the absence of urinary symptoms and the presence of an alternate diagnosis, the positive culture in the patient likely represented asymptomatic bacteriuria, rather than a urinary tract infection. Robust clinical literature, including many randomized controlled trials, show the lack of benefit of treating asymptomatic bacteriuria with antimicrobial therapy across multiple patient populations.\(^6-8\) Furthermore, antimicrobial therapy for asymptomatic bacteriuria has been associated with harm. One trial showed an increased risk of symptomatic urinary tract infection in those who were treated for asymptomatic bacteriuria.\(^9\) The practice is also associated with adverse drug reactions and Clostridium difficile infection.\(^10\)

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References