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CSI Salgados

Quando é que preciso mesmo do urologista?

José Palma dos Reis  
António Pedro Machado

# Investigação da hematúria microscópica assintomática no adulto



ORIGINAL ARTICLE

Mark D. McInnis · Ian J. Newhouse  
Serge P. von Duvillard · Robert Thayer

## The effect of exercise intensity on hematuria in healthy male runners

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**Abstract** The purpose of this study were: (1) to establish the prevalence of exercise-induced hematuria in a group of otherwise healthy male runners ( $n = 70$ ), and (2) to investigate the role of exercise intensity in those runners who exhibited exercise-related hematuria ( $n = 10$ ) by evaluating the effect of running and cycling at high and low intensities. The identified and recruited subjects participated in four different exercise protocols: (1) a 60-min treadmill run (RUN) at 90% of anaerobic threshold ( $Th_{ac}$ ), (2) a 60-min leg cycle ergometer ride (BIKE) at 90% of  $Th_{ac}$ , (3) a  $3 \times 400$ -m sprint (SPRINT), each followed by 4 min of rest or light walking, and (4)  $3 \times 60$ -Wingate leg cycle ergometry tests, each followed by 4 min of rest or light cycling. The study employed a  $3 \times 4$  (time by protocol) within-subjects design and dependent variables were measured before exercise, 4 min after, and 1 h after exercise, and included measurements of hematuria, proteinuria, urinary pH, serum haptoglobin concentration, serum creatine phosphokinase activity, plasma lactate concentration, and hemoglobin. The 400-m sprint at maximal effort significantly in-

**Key words** Proteinuria · Haptoglobin · Hemoglobin · Creatine kinase · Urinary pH

### Introduction

Microscopic hematuria is a common clinical problem which can continue unnoticed over a long period of time and may require expensive and potentially invasive tests by clinicians unless a detailed exercise history is obtained from the patients who exhibit the condition (Mariani et al. 1989). Red blood cells (RBCs) are commonly found in urine. However, three or more RBCs per high power field is considered unusual (Miller et al. 1988). The mechanisms of microscopic hematuria are varied, thus making it difficult to establish the cause. Dysmorphic RBCs may occur in urine when abnormal glomerular permeability allows RBCs to pass through the nephrons in the kidney (Poortmans and Henrist 1989). Their presence implicates altered function of the kidney (Abarbanel et al. 1990; Poortmans et al. 1981). In ad-

# Bladder carcinoma presenting as exercise-induced hematuria

Edward J. Mueller, MD Ian M. Thompson, MD

## Preview

Blood in the urine after exercise may have a number of causes, including cancer of the bladder. Because patients are often young and otherwise healthy, hematuria may easily be misdiagnosed as exercise-induced. To avoid this mistake, the authors recommend complete evaluation of the urinary tract and renal parenchyma in these patients without delay.

Exercise-induced hematuria is a relatively recently described phenomenon that may occur after a person participates in any type of sport. Running is one of the more common activities that cause microscopic and gross hematuria. Because of the large increase in the number of runners over the past several years, the number of such patients presenting for evaluation of hematuria has also increased.

However, a number of urologic diseases can also present as hematuria secondary to exercise and may be overlooked if urologic evaluation is not done. In the following four cases, patients presenting with exercise-induced hematuria were found to have papillary transitional cell carcinoma of the bladder.

## Case 1

A 31-year-old man with a 13-year history of intermittent, gross, total, painless hematuria was referred to the urology service at Brooke Army Medical Center, Fort Sam Houston, Texas. The

patient had played high school football and frequently had noted gross hematuria after strenuous workouts. After joining the military service, he again noted gross hematuria after morning runs of 2 to 3 miles.

Family and childhood histories, physical examination, and baseline laboratory data were unremarkable. Urinalysis was normal, and no red blood cells were seen. The patient had never smoked.

The patient was instructed to run 2 miles and return to the clinic for evaluation to localize the bleeding. However, urinalysis after the run demonstrated neither gross nor microscopic hematuria. Subsequent cystoscopy showed a papillary lesion above the right ureteral orifice. All other cystoscopic findings were normal.

Transurethral resection of the lesion was performed. Histologic examination of the specimen revealed grade II/III, stage 0 papillary transitional cell carcinoma of the bladder.

## Case 2

On two consecutive days before admission, a 68-year-old man had gross, total, painless hematuria after a 2-mile run the first day and a 2-mile walk the second day. He had been jogging for more than ten years, during which time he had never noticed a change in urine color after a workout.

Family and childhood histories and physical examination were unremarkable. The patient had a 35-pack-year history of cigarette smoking. Results of intravenous urography were normal. Cystoscopy showed three 1- to 1.5-cm papillary lesions on the left lateral wall of the bladder. Other cystoscopic findings were normal.

Transurethral resection of the lesions was performed, and histologic examination of the specimens revealed grade II/III, stage A papillary transitional cell carcinoma of the bladder.

## Case 3

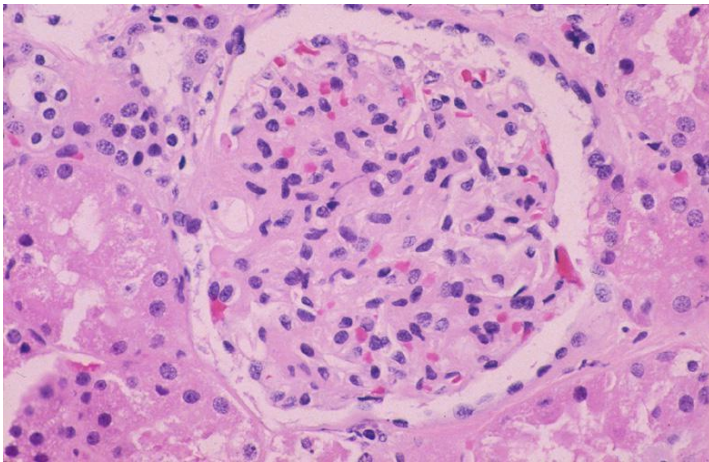
A 22-year-old man noted four episodes of gross, total, painless hematuria during the three months before evaluation. Three of the episodes occurred after morning training runs.

Family and childhood histories and physical examination were unremarkable. The patient reported a 10-pack-year history of cigarette smoking. Results of

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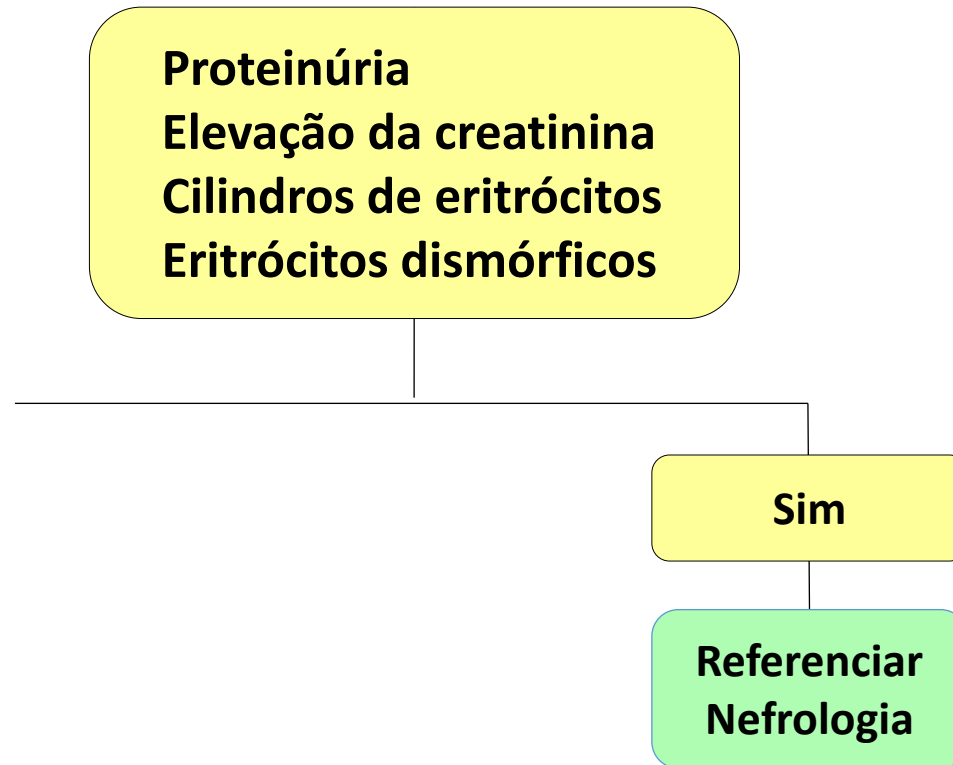


## **Doença de Berger (Nefropatia IgA)**

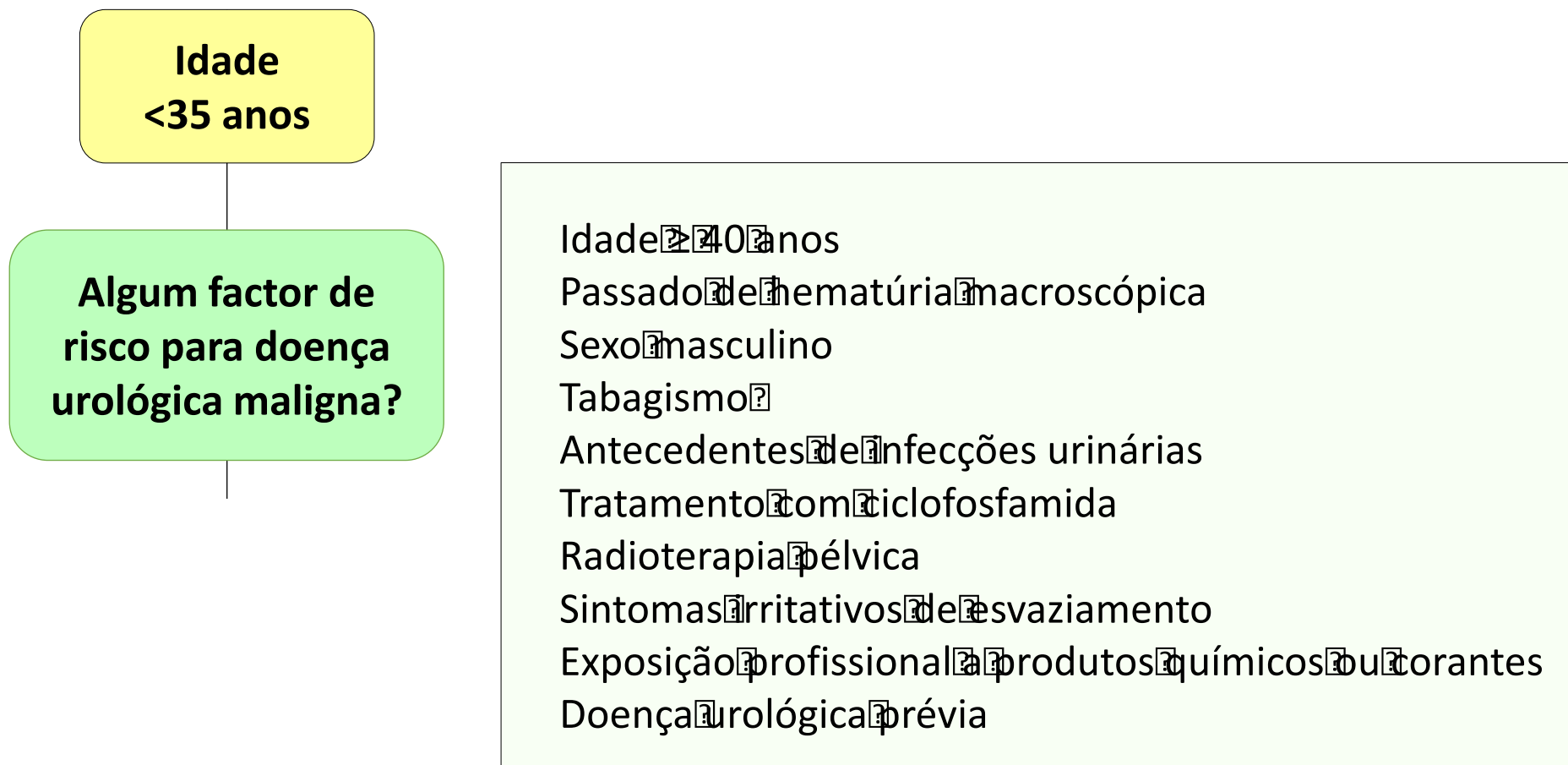


- **Causa mais frequente de glomerulonefrite.**
  - **Deposição de IgA no mesângio glomerular.**
  - **Pode manifestar-se por hematúria microscópica ou macroscópica recorrentes ou GN rapidamente progressiva.**
  - **Após infecção respiratória ou gastroenterite.**
- 
- **Sedimento urinário com eritrocitúria e cilindros de eritrocitos. Proteinúria habitualmente ligeira.**
  - **Diagnóstico confirmado por biópsia renal**

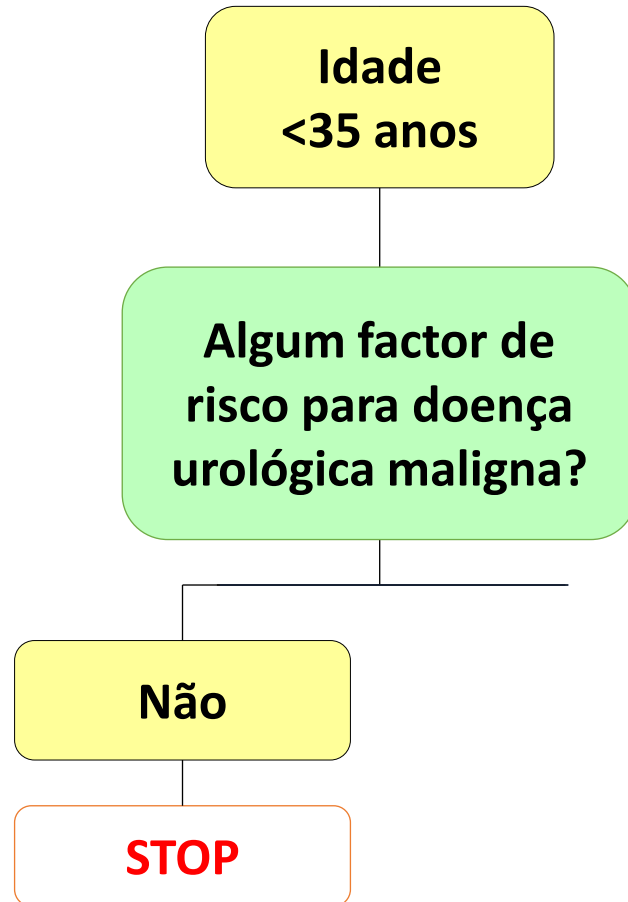
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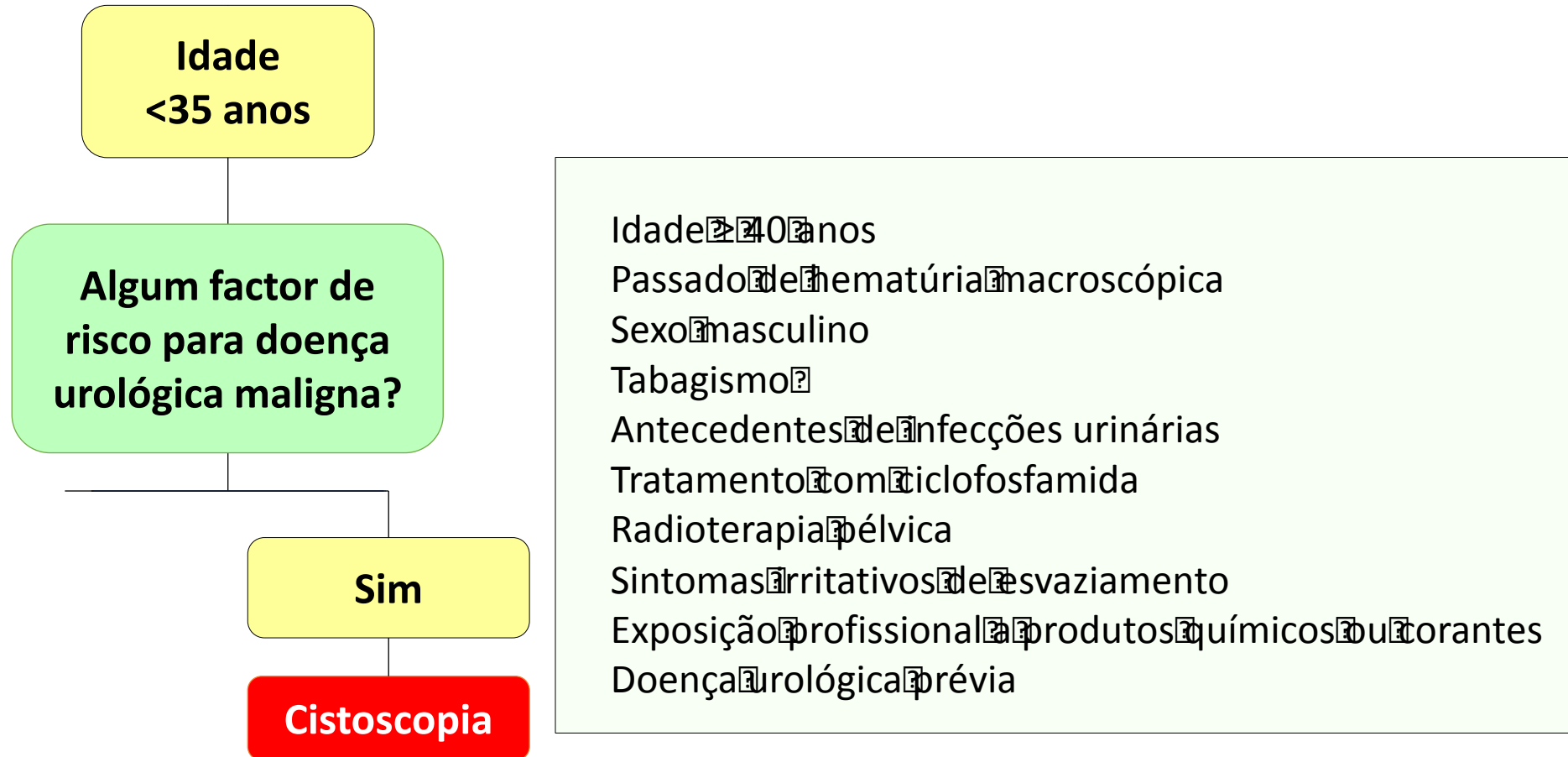


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