Letters to the Editor

Last Word on Point: Counterpoint “Sickle cell trait should/should not be considered asymptomatic and as a benign condition during physical activity”

Philippe Connes,1 Marie-Dominique Hardy-Dessources,2 and Olivier Hue1

1Laboratoire ACTES (EA 3596), Département de Physiologie, Université des Antilles et de la Guyane, Guadeloupe; and 2UMR-Inserm U763/Université des Antilles et de la Guyane, Pointe-à-Pitre, Guadeloupe, France

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TO THE EDITOR: We greatly appreciate the contributions made by Bergeron and Baskurt and Meiselman (1) and we sincerely agree with their remarks. Although sickle cell trait (SCT) carriers are characterized by blood rheological abnormalities (3) and sometimes hemostatic and vascular cell adhesion perturbations, most of the SCT carriers performed exercise without any symptoms. As underlined by Baskurt and Meiselman (1), the vascular autoregulatory reserve is undoubtedly a critical point in the fatal events reported in SCT carriers during exercise that requires further investigation. Particularly, the interrelationships between nitric oxide metabolism and blood rheology, such as red blood cell aggregation and deformability, must be investigated in SCT carriers. Kark et al. (2) reported that the relative risk of exercise-related death unexplained by pre-existing disease was 28 for SCT. The excess exercise-related death with SCT was likely to result from the immediate stress of exercise. About 50% of the deaths resulted from heat illness due to over exertion and the remaining cases were idiopathic sudden deaths. It is difficult to prove a causal relationship between SCT conditions and these sudden deaths and it is possible that co-risk factors, such as heat stress, viral illness, poor physical conditioning, and dehydration, have precipitated the occurrence of these fatal complications. Of course, SCT carriers must practice sports, as everyone, but basic recommendations have to be provided by medical staff and trainers, such as wear light clothes, start exercise gradually, and drink adequately during exercise. The last recommendation is particularly important for SCT carriers because it seems that they might be naturally more predisposed to dehydration due to their inability to concentrate their urine when deprived of water (4). This defect might make SCT carriers less able to conserve water than noncarriers.

The National Athletic Trainers’ Association (NATA) in the United States recently elaborated a task force that includes more than 20 organizations. They strongly propose that colleges and high schools show greater awareness of the typically benign condition, which poses a grave risk during intense exertion of physical activity. The Task Force consensus recommends confirming SCT status in all athletes’ preparticipation physical examinations and provides details on measures that can reduce the risk of collapse during sports and exercise related to SCT among athletes.

REFERENCES

1. Baskurt OK, Meiselman HJ, Bergeron MF. Comments on Point:Counterpoint “Sickle cell trait should/should not be considered asymptomatic and as a benign condition during physical activity.” J Appl Physiol; doi:10.1152/japplphysiol.00886.2007.

Address for reprint requests and other correspondence: P. Connes, Laboratoire ACTES (EA 3596), Département de Physiologie, Université des Antilles et de la Guyane, Guadeloupe (e-mail: pconnes@yahoo.fr).