

Platinum Opinion

Bladder Cancer and Associated Risk Factors: The African Panorama

Guglielmo Mantica^{a,*}, Carlo Terrone^a, André Van Der Merwe^b

^a Department of Urology, Policlinico San Martino Hospital, University of Genova, Genova, Italy; ^b Department of Urology, Tygerberg Hospital and Stellenbosch University, Cape Town, South Africa

Bladder cancer (BCa) is an important health problem. It is the ninth most common cancer worldwide (with an incidence of >400 000 cases per year) and 13th in terms of mortality rate [1]. We read with interest the recent article by Teoh et al [2] regarding the global trends for BCa. The authors made astute associations with tobacco use and gross domestic product per capita. Tobacco exposure was directly associated with BCa incidence and mortality among men, and BCa incidence among women. While Europe has increasing BCa incidence and a decreasing BCa mortality rate, the opposite is true in Asia, where incidence is decreasing and male mortality is increasing. Few reliable data have been presented for Africa. Therefore, we would like to emphasize the African scenario. We believe that Africa is unique compared to other continents and poses problems in terms of epidemiological evidence, causes of BCa, and possible future trends.

First, there is considerable discrepancy between countries regarding BCa incidence and mortality and the population rates of cigarette use. This is especially true in some countries, such as Tanzania and Mali, and among females [3]. This suggests that other key carcinogenic processes are common, such as parasitic infection with *Schistosoma haematobium* (Fig. 1), and makes Africa an exception to global observations [4]. Schistosomiasis is a huge problem in sub-Saharan Africa: in some rural areas the prevalence exceeds 50%, even in young age groups. The prevalence of this disease is at best static for most countries, and may even be increasing in some regions [5,6].

Second, African data, as correctly stated by Teoh et al, are likely to be unreliable in most countries for structural reasons and bureaucratic and cultural deficiencies. It is likely that data on BCa incidence, prevalence, and mortality

in the African continent are actually under-reported and underestimated.

Third, changing demographics are a factor that complicates the situation. There is slow growth of gross domestic product in many countries. In addition, the use of cigarettes in African countries is increasing. Trends show that use has increased by 50% in the last 35 yr and this could further worsen the current scenario in the coming decades [7].

Unless public health campaigns and mass anti-schistosomiasis treatment schemes with praziquantel are implemented, Africa is at risk of being gripped by major bladder carcinogens with consequent devastating effects on the public health of the continent in both human and economic terms. Two main areas require focus in order to reduce the impact of schistosomiasis and tobacco use on the continent: (1) education and knowledge; and (2) public health interventional measures. The cultural awareness of diseases and their symptoms and risk factors is a problem that should not be underestimated in some areas of the African continent. According to anecdotal stories from local doctors, hematuria is considered a normal physiological sign rather than a BCa symptom in some rural villages near *S. haematobium*-infested rivers.

On the one hand, cultural campaigns, with the support of medical practitioners in areas with higher BCa incidence and using the most popular social media platforms, could represent an effective, simple, and low-cost tool capable of increasing awareness about BCa risk factors and mortality and the importance of early prevention. This strategy could be very powerful, as more than 30% of the current African population are social media users. On the other hand, one of most powerful and low-cost public health strategies might be to ban smoking in public places (not yet carried out in most African countries) and to ensure the availability of

* Corresponding author. Department of Urology, Policlinico San Martino Hospital, University of Genova, 16132 Genova, Italy. Tel. +39 010 5553935. E-mail address: guglielmo.mantica@gmail.com (G. Mantica).

<https://doi.org/10.1016/j.eururo.2020.11.041>

0302-2838/© 2020 European Association of Urology. Published by Elsevier B.V. All rights reserved.



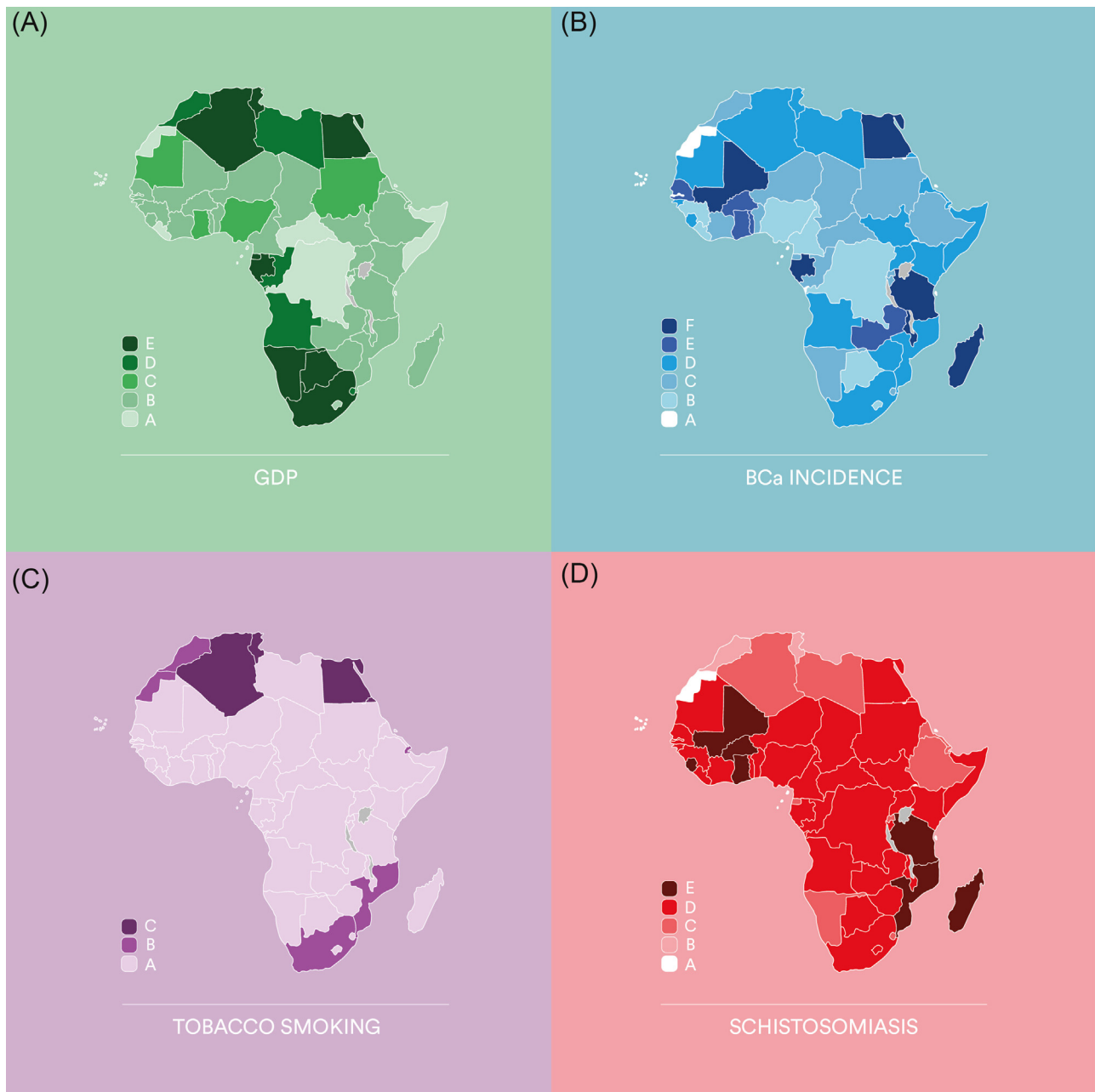


Fig. 1 – African maps. (A) Gross domestic product (GDP) per capita in millions of international dollars 2017. Key: A, ≥ 1 and <2000 ; B, ≥ 2000 and <4000 ; C, ≥ 4000 and <6000 ; D, ≥ 6000 and <10000 ; E, ≥ 10000 . (B) Estimated age-standardized incidence rate of bladder cancer (BCa) among females per 100,000 individuals in 2018. Key: A, no data; B, ≥ 1 and <0.9 ; C, ≥ 0.9 and <1.5 ; D, ≥ 1.5 and <2.2 ; E, ≥ 2.2 and <3.6 ; F, ≥ 3.6 . (C) Cigarette smoking as the number of cigarettes per person per year in 2016. Key: A, <500 ; C, ≥ 500 and <1500 ; E, ≥ 1500 . (D) Prevalence of schistosomiasis by country in percentage terms for 2006. Key: A, no data; B, close to elimination; C, $<10\%$; D, $\geq 10\%$ $<50\%$; E, $\geq 50\%$.

praziquantel in specific high-risk settings. In fact, praziquantel is already available free of charge in many sub-Saharan countries with a high disease burden, thanks to a donation from Merck Serono to the World Health Organization [8].

With focused effort supported by international urology associations, the fate of BCa in Africa could be significantly changed in the coming years, in particular by decreasing its incidence and mortality.

Conflicts of interest: The authors have nothing to disclose.

Acknowledgments: The authors are grateful to Martina Mantica for her support in drafting Fig. 1.

References

- [1] Cumberbatch MGK, Jubber I, Black PC, et al. Epidemiology of bladder cancer: a systematic review and contemporary update of risk factors in 2018. *Eur Urol* 2018;74:784–95.

- [2] Teoh JY, Huang J, Ko WY, et al. Global Trends of Bladder Cancer Incidence and Mortality, and Their Associations with Tobacco Use and Gross Domestic Product Per Capita. *Eur Urol* 2020;78(6):893–906. <http://dx.doi.org/10.1016/j.eururo.2020.09.006>, Epub 2020 Sep 21. PMID: 32972792.
- [3] Sreeramareddy CT, Pradhan PM, Sin S. Prevalence, distribution, and social determinants of tobacco use in 30 sub-Saharan African countries. *BMC Med* 2014;12:243.
- [4] World Health Organization. Global distribution of countries where human schistosomiasis is transmitted. www.who.int/schistosomiasis/Schistosomiasis_2012-01.png?ua=1.
- [5] Exum NG, Kibira SPS, Ssenyonga R, et al. The prevalence of schistosomiasis in Uganda: a nationally representative population estimate to inform control programs and water and sanitation interventions. *PLoS Negl Trop Dis* 2019;13:e0007617.
- [6] Mantica G, Van der Merwe A, Bonkat G. Greetings from Africa: the emergence of tropical urological diseases in Europe. We had better be prepared! *Eur Urol* 2019;76:140–1. <http://dx.doi.org/10.1016/j.eururo.2019.05.012>.
- [7] Drope J, Schluger N, Cahn Z, et al. The tobacco atlas. Atlanta, GA: American Cancer Society and Vital Strategies; 2018.
- [8] World Health Organization. Schistosomiasis. Strategy. www.who.int/schistosomiasis/strategy/en/.

ESU-ESUT-ERUS Masterclass on Partial nephrectomy

Virtual

10-11 June 2021

www.esupartialnephrectomy.org

esut erus eai esu European School of Urology