LETTER to the EDITOR

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# Increased Risk of Penile Cancer among Men Working in Agriculture: Some Methodological Issues

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## Dear Editor

We read with great interest the article authored by Junior et al., (2018) published in APJCP in January 2018. In their study, the authors introduced several risk factors for penile cancer. They suggested that phimosis, smoking, HPV infection and promiscuous sexual behaviour act as risk factors for penile cancer. Although, the findings are interesting, we believe some methodological issues are to be raised to prevent any misinterpretation.

**Firstly,** authors conducted a descriptive (cross-sectional) study to investigate any associations between several factors and the risk of penile cancer among those seeking medical services. However, the study was carried out with no explanation about the defined order of events, i.e. whether exposure occurred before-after or during the onset of the penile cancer (Levin, 2006). This makes the authors conclusion about the causality of the founded associations. This is especially important because long term associations between an exposure and outcome is particularly difficult to establish using such study designs (Höfler, 2005; Rothman and Greenland, 2005).

**Secondly,** in this cross-sectional study, a total of 103 patients with invasive penile cancer who were being treated from 2012 to 2017 were enrolled. In Table 3 of the article, authors reported descriptive statistics (n %) of characteristics of the patients with no comparison group, e.g. healthy individuals. As the result, the authors were not able to report any measures of associations and related p-values. As we know, in measuring associations it is important to compare characteristics of patients with healthy controls (Rothman et al., 2008). In that regard, the title of the present study is not representative of the study design and findings, as no measure of associated risk e.g. relative risk (RR) or odds ratio (OR) was reported for these so-called risk factors (Mann, 2003). The other important concern about the validity of the results (as presented in Table 3) is that there is a significant portion of data missing for many of the study participants and study variables. Any study with such low response rate can be criticized because high missing and non-response rates may cause information and selection biases and misleading results (Mann, 2003). It seems that to reach the desired conclusion, a case-control design would be a preferable approach (Grimes and Schulz, 2002; Mann, 2003; Dianatinasab et al., 2017).

**The Final issue** to be raised with their study is that whether authors enrolled all cases (prevalence and incidence cases) or only new cases were included. If all cases were included in the study, the founded associations are potentially based on the survival of the patients and not the occurrence of disease (Szklo et al., 2001). The later issue reminds the crucial importance of prevalence-incidence bias (Freeman and Hutchison, 1980). As conclusion, the previously mentioned methodological issues are to be seriously considered by readers to avoid any misinterpretations of the results and conclusion of the study.

*Conflict of interest*

None.

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