information for conducting a meta-analysis. Our statement 'no statistically significant associations were reported for prostate and pancreatic cancers', which refers to cancer risk, is supported by summary estimates provided in the text and in Figure 3 (RR per 1 score 0.99, 95% CI 0.97−1.02; $I^2 = 0\%$, P het 0.43; six studies and 0.86, 95% CI 0.62−1.18; $I^2 = 90\%$, P het <0.001; two studies, respectively). Apart from lacking a dose−response relationship, the results for pancreatic cancer were only reported in two studies and were highly heterogeneous. Unfortunately, a meta-analysis was not possible for mortality data, because not enough studies assessed the relationship between meeting the 2007 World Cancer Research Fund/American Institute for Cancer Research (WCRF/AICR) recommendations and survival in patients with pancreatic or prostate cancer (Table 2B). As already stated in our discussion, upcoming studies using the recently updated WCRF/AICR score are warranted to draw firmer conclusions regarding mortality or cancer survival.[2] Concerning the comment regarding the use of relative risks (RRs), we used this term to uniformly refer to risk estimates [i.e. hazard ratio (HR), risk ratio, odds ratio (OR)] in tables and figures. In particular, all cohort studies provided results in HRs and only case−control studies used ORs. Thus, a primary meta-analysis synthesizing findings within the same study design does not have an issue of combining different measures of association. In addition, results for HR and OR were pooled to produce a summary estimate in the meta-analysis. This was done under the assumption that when events are rare and absolute cancer risks are small, these measures will be approximately equal in the studies.[3]

Finally, we assessed between-study heterogeneity and small-study effects using standard methods (Cochran's Q, I^2, Egger's regression asymmetry test and funnel plot), and we appreciate the efforts of Jayaraj *et al.*[1] to complement our analysis with additional statistics that make our findings more transparent.

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DISCLOSURE

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On the relationship between androgen-deprivation therapy for prostate cancer and risk of infection by SARS-CoV-2

Recently, Montopoli et al.[1] evaluated the relationship between androgen-deprivation therapy (ADT) for prostate cancer (PC) and risk of infection by severe acute respiratory syndrome-coronavirus 2 (SARS-CoV-2) through a population-based study of patients with laboratory-confirmed SARS-CoV-2 infection from 68 hospitals in Veneto, Italy. They found that only four of 5273 PC patients treated with ADT (0.07%) developed SARS-CoV-2 infection and such patients had a significantly lower risk of SARS-CoV-2 infection than the patients who did not receive ADT.

To further investigate this potential relationship, we identified all of the cases of COVID-19 that have occurred in patients with metastatic castration-resistant PC and metastatic castration-sensitive PC treated in most of the high-volume referral medical oncology departments in northern Italy. Italy was the first country outside China to experience widespread SARS-CoV-2 infection and, as of 6 May 2020, the country with the fourth highest number of cases and deaths,[2] with the regions of northern Italy accounting for 80.4% of the cases and 86.7% of the deaths.[3]

The 19 high-volume medical oncology departments contributing to this study were treating a median of 80 patients with metastatic PC each (range 48−230), with a total of 1949. All of the patients were receiving ADT alone or in combination with one chemotherapeutic agent (docetaxel or cabazitaxel), one new-generation androgen-targeting agent (abiraterone or enzalutamide), or one radiopharmaceutical agent (radium 223). Thirty-six of these patients had a confirmed diagnosis of SARS-CoV-2 infection (1.8%). Their median age was 74.5 years,

and 66.7% were aged ≥70 years. Most of the infected patients (61.1%) were hospitalized; five are still infected, 20 (55.6%) have recovered, and 11 (30.6%) have died.

Our finding that the risk of developing a SARS-CoV-2 infection among patients with metastatic PC is higher than that described by Montopoli et al. may be due to differences in selection of the population considered to be potentially exposed to the infection. They evaluated a cohort of patients identified by means of a regional cancer registry, who may receive ADT for metastatic disease or biochemical relapse in the absence of any clinically detectable signs of disease, but the authors did not indicate which disease stage the patients were in when they were administered ADT. On the contrary, we identified a homogeneous population of consecutive patients with metastatic castration-sensitive PC/metastatic castration-resistant PC treated in most of the high-volume referral medical oncology departments in northern Italy. Clearly, all of our patients had advanced disease and this may explain the different incidence of SARS-CoV-2 infection.

In terms of lethality of SARS-CoV-2 infection, we observed three deaths among the 12 patients aged <70 years (25%), a lethality rate that is higher than that expected in infected Italian males aged <70 years as a whole (<13.0%). The eight deaths among the 24 patients aged ≥70 years (33.3%) lead to a lethality rate that is in line with that observed in Italian SARS-CoV-2-positive males aged ≥70 years as a whole (>30.3%).[3] These findings do not apparently support the postulated protective effect of ADT, at least in patients with metastatic PC.

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