INCIDENCE AND PREDICTORS OF CASTRATION RESISTANCE AMONG PATIENTS WITH PROSTATE CANCER ON ANDROGEN DEPRIVATION THERAPY AT MBARARA REGIONAL REFERRAL HOSPITAL

BACKGROUND: Globally, prostate cancer comes second among the most prevalent diagnoses of cancers in men, with incidence at 14.1%. According to GLOBOCAN 2020,prostate cancer had the second highest number of new cases in Ugandan men in 2020 at 2375 (16.3%), only second to Kaposi sarcoma. An advanced form of prostate cancer is castration-resistant prostate cancer (CRPC), in which there is disease progression after pharmaceutical (androgen deprivation) or surgical castration. It has poor prognosis and patients have reduced survival. This is in part due to limited treatment options and unsatisfactory therapeutic effects. The aim of this study was to determine the incidence and predictors of castration resistance among prostate cancer patients on androgen deprivation therapy (ADT) at Mbarara Referral Hospital (MRRH).

METHODOLOGY: The study was a retrospective cohort study, at Mbarara Referral Hospital oncology clinic. We included all patients enrolled in the MRRH oncology unit with pathologically confirmed prostate cancer and receiving ADT from January 2014 to December 2021. The study outcome, which is castration resistant prostate cancer was defined as presence of one or both of biochemical or radiological disease progression despite successful castration. Permission to conduct the research was sought from the respective ethical committees and confidentiality, privacy and personality of the patients was safeguarded. Data was analysed using STATA 14.

RESULTS: The estimated incidence rate of CRPC was 232 (95% CI, 195 – 276) per 1000 person-years, that is 23.2%. Obesity with adjusted hazard ratio (AHR) of 2.3 (95% CI, 1.1 – 4.7) and p=0.021, PS(ECOG) >1 with AHR of 1.7 (95% CI, 1.1 – 2.7) and a p=0.019, and nadir PSA >4ng/mL, time to nadir PSA <14 months, and velocity of PSA decline ≥11 with adjusted HRs of 2.7 (95% CI, 1.6 – 4.5), 3.6 (95% CI, 2.4 – 5.5), and 2.1 (95% CI, 1.3 – 3.5) respectively were found to be significant predictors of

CRPC.

CONCLUSION: With a high incidence rate of CRPC depicted by our findings, we recommend screening and early diagnosis of prostate cancer, close monitoring of PSA kinetics for early diagnosis of CRPC and early intervention with other disease modifying therapies, skeletal imaging to identify bone metastasis, and patient education on modifiable factors such as obesity.