Association of age-related parameters with acute toxicity in patients treated with radiation therapy for prostate cancer.

Katarzyna Paal; Bettina Stranz; Eva-Maria Thurner; Tanja Langsenlehner

Background: Radiation therapy (RT) for prostate cancer (PCa) is a highly effective therapy modality, also for patients, who are ineligible for surgical treatment of PCa. Geriatric assessment (GA) comprises a number of tools, which can be used to measure age-associated parameters, and to identify frail patients who are at risk of higher radiation toxicity. The aim of this study was to investigate the association between age-related characteristics and the development of higher acute radiogenic side effects. Patients and methods: A total of 314 patients who received primary curative RT for PCa were enrolled into our prospective study. A GA consisting of the Mini-Mental State Examination (MMSE), Mini Nutritional Assessment (MNA), Nikolaus Scale for Social Situation (SOS), Geriatric Depression Scale, Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), Timed Up and Go (TUG), Charlson Comorbidity Index (CCI) and survey of polypharmacy (P) was performed before start of irradiation. Reported genitourinary (GU) and gastrointestinal (GI) side effects was classified according to EORTC/RTOG scale. High-grade acute radiogenic toxicity was defined as GU and/or GI toxicity grade ?2. Results: Radiation induced side effects grade ?2 were reported in 40 patients (12.7%), GU side effects ?2 in 37 patients (11.8%), and GI side effects grade ?2 in 8 patients (2,5%), respectively. The initial CKI, ADL, and GDS significantly correlated with GI and/or GU toxicity grade ?2 (p=0.029, p=0.050, and p=0.043, respectively). There was also a significant association of ADL with GU toxicity grade ?2 (p=0.046) and of TUG with GI toxicity grade ?2 (p=0.032). Conclusion: Our results show a significant association of comorbidities, mood state, reduced functionality, and mobility with the risk of high-grade acute toxicity in patients treated with RT for PCa. The tools of GA can help in detecting unidentified health problems that influence the risk of radiogenic toxicity.