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The strategies on relationship of trace elements in prostate cancer tissue: Clinical survey and tissue monitoring

In this study, the concentrations of different trace metals including Fe, Mg, Cd, Ni, Zn, Cu, Se, Ca and Boron (B) in malign and benign prostate tissues were determined by Induced Coupled Plasma-Mass Spectroscopy and Induced Coupled Plasma-Optic Emission Spectroscopy. We also analyzed the relationship of these concentrations with histopathology stage, PSA and clinical survey. It was investigated the possible role of tissue trace element levels in development of prostate cancer and the relationship between histopathologic stage, preoperative PSA levels and biochemical PSA recurrences. Cd, Ni and Ca average concentrations were determined lower and Fe average concentration was determined higher in prostate cancer tissue, statistically (55.64 µg/kg, p=0.033; 784.02 µg/kg, p<0.001; 656.94 mg/kg, p<0.001 and 56.52 mg/kg, p=0.039, respectively). There was a negative correlation between B and total Gleason score (p=0.003) and positive correlation between Se and total Gleason score (p=0.002). Mg and Ca were determined higher and B was detected lower in tissues with neuro-vascular invasion (p=0.016, p=0.008 and p=0.033, respectively). Only Zn concentration was lower in cases with extra capsular extension then without (p=0.016). There were no any relationships or correlation between the concentration of trace elements and preoperative PSA levels, biochemical PSA recurrences, surgical margins and invasion of seminal vesicles. The increasing in Fe levels and decreasing in Cd, Ni, Ca and theirs heterogeneous distribution in malign samples was very important for the investigation of cancer mechanisms. Besides, some of trace elements may effect of the prognosis of prostate cancer. In this context, more studies are needed regarding the increasing or decreasing in the trace element concentrations in malign prostate samples.

Biography

Talha Muezzinoglu is the Head of the Urology Department of Medical Faculty of Celal Bayar University. He has completed her Bachelor of Science at Medical Faculty of Dokuz Eylul University and completed his Proficiency on Urology at Celal Bayar University. Initially, he has worked as Expert Urology Assistant at Community Health Center in Manisa precincts during 1991-1994 and as a Research Assistant and Specialist at Celal Bayar University from 1994 to 2003. He has worked as the Faculty Staff as an Assistant Professor during 2003-2006, and as an Associate Professor during 2006-2011 at the same university. He is currently working as full Professor in the Department of Urology of the Medical Faculty of Celal Bayar University as a Faculty Member from 2011 to date. He professionally officiated at Heildelberg University, Heillbronn Hospital, Germany, as a Research Associate in 2007 and also professionally officiated at Emory University, Atlanta, USA as a Trainee Scholar for Robotic Urological Surgery. He is currently serving on the "Uro-oncology Association" and "Life Quality for Health (SAYKAD)" as Executive Secretary and he is administrating the "Aegean Urology Association''. He is one of the Founder Members of "the Association of Contribution to Education and Employment''.

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