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# Distribution of bone metastases in prostate carcinoma: isotope (technetium 99m methylene diphosphonate) bone scans in a Sri Lankan population

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Prostate cancer occupies a prominent place among malignant neoplasia of the genitourinary tract, and currently represents the most common neoplasia, being the second most frequent cause of death by cancer in men. Besides PSA, prostatic acid phosphatase, alkaline phosphatase, tumor ploidy, Gleason score, ultrasonography, computed tomography, magnetic resonance imaging, and bone scintigraphy are useful in the work-up of patients with prostate neoplasia. Bone is a preferred and sometimes the only site for prostate cancer metastases, which occur in more than 80% of men with advanced prostate cancer. The objective of current study was to study the characteristics of bone isotope scan findings in the evaluation of bone metastasis in patients with prostate carcinoma.

A retrospective observational study was conducted using 213 subjects at the surgical unit at the Teaching Hospital Peradeniya in combination with the Nuclear Medicine Unit. All patients diagnosed with prostate carcinoma who underwent bone isotope scan for the evaluation of bone metastasis, from January 2009 to June 2016, were included in the study. Each patient's bone scan findings were documented. Analysis was carried out using 20.0 version of the statistical package for the social sciences (SPSS).

The study comprised of 213 patients with a mean age of 68.77 years (SD=8.92). Of the study population 46 % (n=98) of the patients were found to have bone metastasis on isotope scan, and 50.2 % (n=107) did not have bone metastasis on isotope scan, while 3.8 % (n=8) bone scan findings were inconclusive.

Of the sites of bone metastasis the commonest site was vertebrae 83.7% (n=82); pelvis 62.2%(n=61), ribs 59.2%(n=58), sternum 30.6%(30), skull 21.4%(n=21), femur 29.6%(n=29), mandible7.1%(n=7), other sites 19.4%(n=19). Other sites included shoulder joint, tibia, clavicles, knee, scapula, sternoclavicular joint, orbital area, and zygomatic bone.

The commonest site of bone metastasis of prostate origin was the vertebral column.