**PACEMAKERS IN PATIENTS WITH HIGH SPINAL INJURY**

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Objectives: Evaluation of pacemaker use in tetraplegic patients.

Background: Within the population of tetraplegic patients, bradycardias, pauses and varying degrees of heart block are common. Their abnormal neurology adds an interesting dimension to their management. Working in collaboration with the spinal team of Buckinghamshire healthcare national spinal injuries centre (NSIC) we studied this unique population of patients. We report the largest UK series to date.

Method: We identified all patients with tetraplegia and permanent pacemakers using records from our NSIC over the last decade. For each patient we studied the indications for pacing, pacing mode chosen, pacemaker interrogations, and their symptoms. We particularly looked at any changes in functional status and their correlations with pacing dependency.

Results: Eighty percent of this group of patients had VVI pacemakers inserted for indications that European guidelines would recommend dual chamber pacing. Of these, twenty five percent were shown to have developed pacemaker syndrome significantly impacting on their quality of life (previously unreported in tetraplegic patients). Patients reported dramatic variations in their energy levels and alertness after alterations to their pacing rates. Within this population of patients we described the first case of the successful combination of cardiac and respiratory pacemakers (VVI pacemaker and phrenic nerve stimulator) without electromagnetic interference.

Conclusions: This study highlights the importance to follow national pacing guidelines regardless of the existence of spinal injury. Pacing modes and their settings have a significant impact on the quality of life of patients, even in those with an almost total restriction in mobility.