

# Heart rate variability measurement: is there a role in predicting the admission outcome of palliative cancer patients?

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Predicting the outcome of admission to palliative care units is a challenging task that faces palliative health-care professionals. Having an insight about the possibility of home discharge of cancer patients admitted to palliative care units may help in planning their future care. This is also important for other aspects of end-of-life care like better communication between the palliative care team and advanced cancer patients and their families (1). Numerous studies investigated different variables as predictors of prognosis in advanced cancer patients (1).

Among these studied variables is autonomic dysfunction (AD) which is a common phenomenon that affects the majority of patients with advanced cancer (2).

Heart rate variability (HRV) measurement is a simple non-invasive tool which was found to be useful in the diagnosis of AD in patients with advanced cancer (3).

The high prevalence of AD in advanced cancer patients, its association with poor prognosis in other non-cancer patient populations, and the availability of HRV as a simple diagnostic tool; have led researchers to investigate the utility of HRV measurement in predicting prognosis in advanced cancer patients.

The few studies that assessed the prognostic value of HRV in advanced cancer patients provided conflicting evidence. Some of these studies found a significant correlation between HRV and the survival of patients with advanced cancer (4-6). In other studies, there was no association between HRV and survival (7,8).

The results of a study recently published in the past issue of the *Annals of Palliative Medicine (APM)* added further to the conflict of evidence. In that study, Masel *et al.* investigated the prognostic value of HRV

measurement in a cohort of palliative care advanced cancer patients (9). Unlike previous studies which focused on survival, Masel *et al.* tested prospectively the ability of HRV measurements in predicting the outcome of admission to a palliative care unit (9). There was no significant difference in HRV measurements between patients who died in the palliative care unit and those who were discharged alive. The investigators pointed to the small sample size and its heterogeneity as a possible contributor to the non-significance of results.

As recommended by the authors, and taking into consideration the limitations they have mentioned, future studies may be needed to investigate the relationship between HRV measurements and the outcome of admission to palliative care units.

However, it should be noted as stated by the authors, that “a time-consuming assessment is not always possible in clinical routine”. Even if it is non-invasive and simple, a 24-hour HRV assessment may not be practical in the clinical routine care for terminally-ill patients.

On the other hand, the study of Masel *et al.* further confirmed the prognostic value of performance status assessment in the palliative cancer care setting (9).

Patients who were discharged alive had a statistically significant better performance status as measured by the Karnofsky performance status scale (KPS) and the palliative performance scale (PPS). To predict the outcome of admission to palliative care units; simple and non-time consuming clinical indicators like the KPS and the PPS may be more applicable in real-life palliative care clinical practice.

Finally, predicting the outcome of admitting palliative care patients to institutions is a challenging issue that needs

to be addressed in future research to find reliable, practical, simple and non-invasive predictive tools.

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