

In conclusions, baseline hypertension is associated with better overall survival in patients with HCC in two independent cohorts, and the mechanism was associated with low VEGFR-1 expression levels in HCC.

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References

- [1] Kappers MH, van Esch JH, Sleijfer S, Danser AH, van den Meiracker AH. Cardiovascular and renal toxicity during angiogenesis inhibition: clinical and mechanistic aspects. *J Hypertens* 2009;27:2297–309.
- [2] Rini BI, Halabi S, Rosenberg JE, et al. Phase III trial of bevacizumab plus interferon alfa versus interferon alfa monotherapy in patients with metastatic renal cell carcinoma: final results of CALGB 90206. *J Clin Oncol* 2010;28:2137–43.
- [3] Dahlberg SE, Sandler AB, Brahmer JR, Schiller JH, Johnson DH. Clinical course of advanced non-small-cell lung cancer patients experiencing hypertension during treatment with bevacizumab in combination with carboplatin and paclitaxel on ECOG 4599. *J Clin Oncol* 2010;28:949–54.
- [4] Schneider BP, Wang M, Radovich M, et al. Association of vascular endothelial growth factor and vascular endothelial growth factor receptor-2 genetic polymorphisms with outcome in a trial of paclitaxel compared with paclitaxel plus bevacizumab in advanced breast cancer: ECOG 2100. *J Clin Oncol* 2008;26:4672–8.
- [5] Scartozzi M, Galizia E, Chiellini S, et al. Arterial hypertension correlates with clinical outcome in colorectal cancer patients treated with first-line bevacizumab. *Ann Oncol* 2009;20:227–30.
- [6] Rini BI, Schiller JH, Fruehauf JP, et al. Diastolic blood pressure as a biomarker of axitinib efficacy in solid tumors. *Clin Cancer Res* 2011;17:3841–9.
- [7] Zhu AX, Duda DG, Sahani DV, Jain RK. HCC and angiogenesis: possible targets and future directions. *Nat Rev Clin Oncol* 2011;8:292–301.
- [8] Llovet JM, Ricci S, Mazzaferro V, et al. Sorafenib in advanced hepatocellular carcinoma. *N Engl J Med* 2008;359:378–90.
- [9] Pressiani T, Boni C, Rimassa L, et al. Sorafenib in patients with Child-Pugh class A and B advanced hepatocellular carcinoma: a prospective feasibility analysis. *Ann Oncol* 2013;24:406–11.
- [10] Liu CH, Chen TC, Chau GY, et al. An analysis of protein-protein interactions in cross-talk pathways reveals CRKL as a novel prognostic marker in hepatocellular carcinoma. *Mol Cell Proteomics* 2013;12:1335–49.
- [11] Eppig JT, Blake JA, Bult CJ, Kadin JA, Richardson JE. The Mouse Genome Database (MGD): comprehensive resource for genetics and genomics of the laboratory mouse. *Nucleic Acids Res* 2012;40:D881–6.
- [12] Bruix J, Sherman M. Management of hepatocellular carcinoma. *Hepatology* 2005;42:1208–36.
- [13] Lin YT, Liu CJ, Chen TJ, et al. Pyogenic liver abscess as the initial manifestation of underlying hepatocellular carcinoma. *Am J Med* 2011;124:1158–64.
- [14] Mouhayar E, Salahudeen A. Hypertension in cancer patients. *Tex Heart Inst J* 2011;38:263–5.
- [15] Robinson ES, Khankin EV, Karumanchi SA, Humphreys BD. Hypertension induced by vascular endothelial growth factor signaling pathway inhibition: mechanisms and potential use as a biomarker. *Semin Nephrol* 2010;30:591–601.

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Health-related quality of life associated with treatment adherence in patients with hypertension: A cross-sectional study

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Hypertension is one of the most important risk factors for coronary heart disease, heart failure, renal failure and stroke, and it remains an important public health challenge which contributes to disability, health care costs and mortality [1,2]. The concepts of medication adherence and

health-related quality of life (HRQoL) are commonly used in clinical research for assessing pharmaceutical care and improving treatment outcomes [3]. Adherence to drug treatment usually refers to the extent to which patients follow the instructions of their physician or health care providers. HRQoL also refers to the physical, psychological and social dimensions of health that are influenced by a person's experiences, beliefs, expectations and perceptions [4]. Generally one would expect a positive relationship between the two concepts. The objective of this study was to examine the relationship between adherence and HRQoL in a hypertensive population. Knowledge of any differences in HRQoL in this population may be helpful in the planning of therapeutic interventions that will ensure desirable HRQoL and not just the control of blood pressure. Knowledge of HRQoL in hypertensive patients and of the relationship between HRQoL and adherence, being a reliable determinant of cardiovascular disease (CVD) events, will be helpful in preventing or reducing the incidence of CVDs.

A cross-sectional study design was used to address the research goals. The study was conducted in outpatients' clinics at Al-Makhfyah primary health care clinic and at Alwatani Hospital, Nablus in Palestine. Therefore, a convenience sample of 410 hypertensive outpatients was identified between July and October 2012. This study received approval from the Palestinian Ministry of Health and Institutional Review Board

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