Investigation of tumour necrosis factor receptor-associated factor-1 expression in renal cell carcinoma from a single Asian centre

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Introduction: Tumour necrosis factor receptor-associated factor-1 (TRAF-1) is a protein involved in the regulation of inflammation, apoptosis and proliferation. We have previously found decreased TRAF-1 in a renal cell carcinoma (RCC) patient cohort from Princess Alexandra Hospital in Brisbane, compared with normal kidney. A Malaysian patient population was added as a multi-centre study. The aim was to compare TRAF-1 expression in normal kidney, RCC tissue, and serum from control and RCC patients from the University of Malaya Medical Centre (UMMC).

Patients and Methods: The formalin-fixed, paraffin-embedded tissue of 69 clear cell RCC patients from UMMC and the paired normal kidney were stained with TRAF-1 (immunohistochemistry) and analysed using Aperio ImageScope morphometry (positive pixel counts/PPC) to compare TRAF-1 expression. The ELISA method was employed to determine TRAF1 in serum from 15 ccRCC patients and 15 healthy people. Statistical analysis was carried out using ANOVA, Tukey’s post-hoc (tissue) and Mann-Whitney U-test (serum).

Results: In tissue samples, TRAF-1 expression was lower in ccRCC (82591 ± 5646) (p < 0.05) compared with normal kidney (168512 ± 6166 PPC). TRAF-1 in serum from ccRCC patients was increased compared to normal serum (202.28 ± 74.58 vs 50.63 ± 13.56 pg/mL; p = 0.012).

Conclusions: Lower TRAF-1 in ccRCC, seen in our previous Australian cohort, was confirmed. Significantly increased serum TRAF-1 may indicate the protein is actively secreted from developing ccRCC. Serum TRAF-1 may be a useful non-invasive indicator of RCC development.

Pathological changes of the urinary tract from chronic oral ketamine and its reversibility in a rat model

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Introduction: Prolonged ketamine abuse can cause urinary tract damage but the reversibility of these damages is still unclear. We aim to determine the histopathological effects of oral ketamine in the urinary tract using rat models and the reversibility of these changes after ketamine cessation.

Methods: Rats (N = 8 in each group) were fed by oral gavage with 200 mg/kg of pure ketamine for 4 and 12 weeks, respectively. Control rats were given distilled water. Half of the rats were sacrificed immediately after the feeding period for examination while the cessation groups were taken off ketamine for 8 weeks before necropsy. Histopathological examination was performed on the bladder and kidney. Results: Rats treated with ketamine for 4 weeks showed inflammatory changes in the bladder but not in the kidney. After ketamine cessation, there was no bladder inflammation in all rats. Rats treated with ketamine for 12 weeks showed bladder submucosal inflammatory changes and interstitial nephritis. These pathological changes were also reversed after ketamine cessation.

Conclusion: Inflammatory changes in the bladder precede the changes in the kidneys. Pathological changes from short and intermediate ketamine exposure were reversible upon ketamine cessation.

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Clinical data as prognostic tools in the management of renal cell carcinoma (RCC)


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Introduction: Although there has been an increase in incidental diagnosis of renal cell carcinoma (RCC), a substantial proportion of patients still present with the typical clinical signs and symptoms; with 20–30% of patients having advanced RCC at diagnosis. Therefore, the aim was to determine the association of predictive clinical parameters of localized and advanced RCC at diagnosis.

Patients and Methods: Medical records of 147 RCC patients diagnosed at University of Malaya Medical Centre (UMMC) from 2003–2012 were assessed. Symptoms at presentation included the classical triad (macro-hematuria, loin pain, abdominal mass), para-neoplastic (fever, loss of weight/appetite [LOW/LOA], lethargy), and blood tests (albumin, alkaline...
phosphatase [ALP], calcium, hemoglobin, platelets, lymphocytes, neutrophils) were analysed. Logistic regression analysis was carried out to determine odds ratio (OR) of advanced/localized RCC, based on the clinical parameters.

Results: Among the classical triad of symptoms, only abdominal mass (OR 2.94; p = 0.003) was significantly predictive for advanced RCC. Patients with all the triad symptoms were more likely to have advanced disease (OR 6.77; p = 0.011). Fever (OR 2.57; p = 0.068), LOW/LOA (OR 3.47; p < 0.001) and lethargy (OR 3.16; p = 0.022) were predictors of advanced disease. A combination of at least two para-neoplastic symptoms had stronger predictive value (OR 6.98; p = 0.001). Among the blood tests, elevated ALP (OR 5.84; p = 0.001), corrected calcium (OR 12.77; p = 0.018), low albumin (OR 4.90; p < 0.001), hemoglobin (OR 4.58; p < 0.001) and low lymphocyte count (OR 3.89; p < 0.001) were also indicators of advanced RCC.

Conclusions: Clinical symptoms and blood tests can be useful prognostic predictors, alongside medical imaging, in assessing whether a patient has localized or advanced RCC. However other tools, such as novel biomarkers, may need to be developed to add to these clinical parameters, for better identification of RCC stages of disease.

270
Radical nephrectomy and vena caval thrombectomy with the use of cardiopulmonary bypass: a contemporary experience

A patient presented with a right renal mass and was found to have an embolus from the same to the vena cava. The patient underwent a radical nephrectomy and successful thrombectomy with the use of cardiopulmonary bypass (CPB) to achieve the best oncologic outcome. The patient was discharged 5 days later and no further recurrence was noted at 3-month follow-up.