Oncotarget. 2017 Nov 7; 8(55): 94223–94234.

Human renal adipose tissue induces the invasion and progression of renal cell carcinoma.

Fiorella Campo-Verde, José López, Leonardo Romeo, Noelia Giorlando, Flavia Bruna, David Contador, Gastón López, Flavia Santiano, Corina Sasso, Leila Zyla, Constanza López, Juan Calvo, Rubén Carón y Virginia Pistone.

Abstract

We evaluated the effects of conditioned media (CMs) of human adipose tissue from renal cell carcinoma located near the tumor (hRATnT) or farther away from the tumor (hRATfT), on proliferation, adhesion and migration of tumor (786-O and ACHN) and non-tumor (HK-2) human renal epithelial cell lines. Human adipose tissues were obtained from patients with renal cell carcinoma (RCC) and CMs from hRATnT and hRATfT incubation. Proliferation, adhesion and migration were quantified in 786-O, ACHN and HK-2 cell lines incubated with hRATnT-, hRATfT- or control-CMs. We evaluated versican, adiponectin and leptin expression in CMs from hRATnT and hRATfT. We evaluated AdipoR1/2, ObR, pERK, pAkt y pPI3K expression on cell lines incubated with CMs. No differences in proliferation of cell lines was found after 24 h of treatment with CMs. All cell lines showed a significant decrease in cell adhesion and increase in cell migration after incubation with hRATnT-CMs *vs.* hRATfT- or control-CMs. hRATnT-CMs showed increased levels of versican and leptin, compared to hRATfT-CMs. AdipoR2 in 786-O and ACHN cells decreased significantly after incubation with hRATfT- and hRATnT-CMs *vs.* control-CMs. We observed a decrease in the expression of pAkt in HK-2, 786-O and ACHN incubated with hRATnT-CMs. This result could partially explain the observed changes in migration and cell adhesion. We conclude that hRATnT released factors, such as leptin and versican, could enhance the invasive potential of renal epithelial cell lines and could modulate the progression of the disease.