HEPATOCELLULAR CARCINOMA

Promising results of dendritic cell-based immunotherapy

Patients with advanced hepatocellular carcinoma (HCC) exhibit a degree of clinical response to multiple vaccinations with autologous dendritic cells pulsed *ex vivo* with lysate from a hepatoblastoma cell line, according to data from a phase II study.

HCC is a promising target for immunotherapy because tumor-infiltrating lymphocytes are actively recruited to HCC lesions. However, these lymphocytes fail to kill tumor cells, possibly because T-cell maturation is prevented.

Dendritic cells process antigens and present them to naive T and B cells. Dr Palmer *et al.* isolated dendritic cells from 35 patients with advanced HCC who were not amenable to curative resection, transplantation, local ablation or chemoembolization. Dendritic cells were pulsed with lysates from Hep G2, a liver-tumor cell line with many antigens in common with HCC. Patients received well-tolerated, multiple intravenous infusions of mature, pulsed dendritic cells. Of 25 patients who received at least two vaccinations, one achieved radiological partial response and six disease stabilization for 6–16 months. Of the 17 patients eligible for serological assessment, four achieved partial serological response and four disease stabilization.

Given that most HCCs are diagnosed too late for current curative treatments to be used, Palmer and colleagues conclude that immunotherapy with *ex vivo*-treated dendritic cells deserves further investigation as a treatment strategy for advanced HCC.

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Original article Palmer, D. H. *et al.* A phase II study of adoptive immunotherapy using dendritic cells pulsed with tumor lysate in patients with hepatocellular carcinoma. *Hepatology* **49**, 124–132 (2009).