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Tumor vaccination after allogeneic bone marrow cell reconstitution of the non-myeloablatively conditioned tumor-bearing murine host

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Allogeneic bone marrow cell (BMC) reconstitution of the non-myeloablatively conditioned host is supposed to provide an optimized platform for tumor vaccination. We recently showed that an allogeneic T cell-depleted graft was well accepted if the tumor-bearing host was NK-depleted. Based on this finding a vaccination protocol in tumor-bearing, non-myeloablatively conditioned, allogeneically reconstituted mice was elaborated. Vaccination was most efficient when allogeneically reconstituted, tumor-bearing mice received tumor-primed, donor T cells, which had matured in the allogeneic host together with host-derived tumor lysate-pulsed dendritic cells. High frequencies of tumor-specific proliferating and cytotoxic T cells were recorded, the survival time of tumor-bearing mice was significantly prolonged and in over 50% of mice the tumor was completely rejected. Notably, GvH was not aggravated after vaccination with tumor-primed, donor-derived T cells that had matured in the host, i.e. T cells were tolerant towards the host, but not towards the tumor. The finding convincingly demonstrates the feasibility and efficacy of tumor vaccination of the allogeneically reconstituted, non-myeloablatively conditioned host after establishment of thymic tolerance and ceasing of initial GvH reactivities. Furthermore, they support the working hypothesis that reconstitution protocols favoring tolerance induction, which are time consuming, rather than a rapid establishment of full donor chimersim may allow more efficient tumor vaccination without potentially refreshing GvH reactivites.