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Targeted therapy by calypso 4D localization system

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Calypso 4D localization system is a system based on electromagnetic transponders detection enabling precise 3D localisation and continuous tracking of tumour target. This review intended to provide information in order to (1) show how Calypso 4D localization system works, (2) to present advantages and disadvantages of this system, (3) to gather information from several clinical studies and, finally, (4) to refer Calypso system as a tool in dynamic multileaf collimator studies for target motion compensation. Treatment is done by the implantation of transponders which are excited by an electromagnetic field and resonate back. These frequencies are detected and Calypso software calculates the position of the transponders. If the movement detected is larger than the limits previously defined, irradiation can be stopped. Calypso system has been presented as an accurate tool in prostate radiotherapy treatments. The application of this system to other clinical sites is being developed. The Calypso system allows real-time localization and monitoring of the target, without additional ionising radiation administration. It has been a very useful tool in prostate cancer treatment.

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