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STRESZCZENIE

Idarubicin (IDA) is routinely applied in the treatment of various types of leukemia and metastatic breast cancer. Moreover, gliomas cells reveal sensitivity to IDA administration, which may influence the development of glioblastoma multiforme (GBM) therapy. Current methods encounter several problems related to blood-brain barrier and adverse effects occurring after intravenous and oral administration.

Biodegradable, implantable wafers with IDA may dissolve problems in the therapy of GBM.

The wafers with IDA (5% w/w and 10% w/w) were formulated by a solution casting method from poly(L-lactide-co-glycolide) (L-PLGA) and poly(ε-caprolactone-co-glycolide)

P(CLGA). Degradation of wafers were performed in artificial cerebrospinal fluid (37°C, 240 rpm). The concentration of released IDA was estimated by UV-VIS spectroscopy method (485nm). The wafers features were studied by AFM and FTIR.

IDA released from wafers during 587 days. IDA released in two stages, ensuring bolus dose with continuous maintenance dose. The L-PLGA wafers containing 5% IDA presented the supreme burst effect. Absence of polymer-drug bonds provide appropriate bolus dose. These wafers had the most solid surface and the least differentiated morphology.

Proposed IDA wafers may be an interesting alternative in effective therapy for GBM and need further study.