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(54) **METRONOMIC CONVECTION ENHANCED DELIVERY OF INTRATHECAL CHEMOTHERAPY USING AN IMPLANTED MAGNETIC BREATHING PUMP (MBP) FOR LEPTOMENINGEAL CARCINOMATOSIS**

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(57) **ABSTRACT**

A magnetically controlled pump is implanted into the cerebrospinal fluid of a patient and delivers a plurality of medicating agents at a controlled rate corresponding to the specific needs of the patient. The current invention comprises a flexible double walled lumen, intratumoral catheter which will be implanted. Spinal fluid drawn from the patient is analyzed. Medication is delivered on a continuous metronomic basis into the CSF via an internalized pump. CSF is removed and analyzed for VEGF and other cytokines via spectrophotometer analysis or a lab on a chip. The operation of the apparatus and hence the treatment is remotely controlled based on these measurements and displayed through an external controller.

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