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There was not significant difference in culture results of I, IT and IS groups except the blood cultures. Blood culture positivity was significantly higher in IT group than I and IS groups. Histological inflammation grades were not significantly different between the groups except M group. There was not silver deposition in any organ.

Conclusion: Use of AgNP in that concentration did not provide prophylaxis according to infection group. However, it provided significant prevention of systemic infection according to use of transporter maltose solution. Possibly, maltose acted as a culture media for microorganisms. Repeat of the study with an inert transporter that had not nutritious effect could provide prophylaxis.

Keywords: Prophylactic effect, Silver nanoparticles, Rat model, Spinal stabilization, Infection

OP-EXP.01-07

Metastatic Brain Tumor Differences Based on Embryonic and Adult Stem Cell-Tissues of Origin

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Metastatic Brain Tumors, representing the most common tumor of the brain, challenge our preventive abilities, diagnostic and treatment knowledges, and most importantly these tumors challenge us continuously with the lack of ability in understanding their invading, evasion and dissemination mechanisms which will help us prevent their progress.

Of all the tumors with the potential to metastasize to brain, we diagnose histopathologically most frequently as the organ-tissue of origin: skin, lung, breast, colon, and prostate. These tumors have differences in their embryonic and or adult stem cells of origin and supporting cells in their tumorigenesis process, however, all these tumors have in common the target organ, brain. It is this common denominator that although this is the organ that is affected yet it has primary (stem cells) and supporting cells that interact with cells from the tumor of origin, mostly via cytokine-mediated mechanisms and provide the grounds for metastatic cells to invade and grow in the brain.

Even when there are similarities in the tissue of origin and or anatomical location, differences exist in the mechanism of evasion and dissemination for tumors arising from the same organ and or from the same tissue of embryonic origin, of these cells that have the potential to metastasize to the brain. These differences other than that of embryonic and or adult stem cells of origin exist in the mechanism of invasion, evasion of immunologic control and dissemination of the primary tumor. It is the scope of the lab-work to present some of these differences.

Keywords: Metastatic, Brain, Tumors, Cell of origin

OP-EXP.01-08

The Prevention Effect of Pirfenidone on Epidural Fibrosis in the Post-Laminectomy Rat Model

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Background: Postlaminectomy epidural fibrosis is implicated as a main case of failed back surgery syndrome and associated with increased risk of complications during revision surgery. Pirfenidone is a broad-spectrum anti-inflammatory and anti-fibrotic molecule that has been shown to inhibit the fibrosis progression in patients with idiopathic pulmonary fibrosis and animal models.

Method: Thirty two Wistar albino rats were divided randomly into four equal groups: control, spongostan, systemic pirfenidone and local pirfenidone groups. In all groups, total L1-L3 laminectomy was performed. At 4 weeks post surgery, the animals euthanized and their tissue samples at the laminectomy site were assessed both immunohistochemistry of anti-IL-1, anti- TNF- α and anti- α -SMA antibodies on epidural fibrosis of animal groups and histological evaluation for; dura thickness, epidural fibrosis grading, scar tissue consistency and inflammatory response grading and presence of arachnoidal involvement. All data were evaluated by statistically.

Results: Our data suggests that rats treated with pirfenidone at 4 weeks post-laminectomy had less, dura thickness, epidural fibrosis, scar tissue consistency and inflammatory response and arachnoidal involvement in comparison with the control and spongostan groups. Pirfenidone treated groups show weak labeling for anti-IL-1, anti-TNF- α and anti- α -SMA antibodies than control and spongostan groups. Moreover, by the local application of pirfenidone we obtained better results than systemic administration for all parameters.

Conclusion: The results of our study suggested that pirfenidone has anti-fibrotic effects on epidural fibrosis, especially its effectiveness increased when it is used locally.

Keywords: Laminectomy, Epidural fibrosis, Pirfenidone, Immunohistochemistry IL-1, TNF- α , α -SMA

OP-EXP.01-09

Brain Blood Barrier Disruption in the Treatment of Central Nervous System Tumors

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Brain cancer is accompanied by high mortality rate and dismal prognosis. Its medical treatment presents as a major challenge to modern medicine as most therapeutic agents cannot reach the brain tissue due to their inability to cross the blood-brain barrier (BBB). The BBB presents as a paradoxical structure, physiologically protective and, simultaneously, a therapeutic hindrance. Thus, the transient, reversible and focused disruption of this barrier, combined with the administration of therapeutic agents, builds the conceptual basis for various treatment strategies. Through