DMSO STUDIES – DR. STANLEY JACOBS

The Use of Dimethyl Sulfoxide (DMSO) in the Treatment of Interstitial Cystitis
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Abstract: Dimethylsulfoxide (DMSO) was used in 17 patients with interstitial cystitis. The diagnosis was made on the basis of clinical and laboratory findings and the characteristic picture with Hunner ulcera. The majority of the patients had responded poorly to other forms of conservative treatment. Subjective symptoms were controlled in 2/3 of the cases but repeated treatment was needed and 5 patients did not respond to the therapy. The DMSO treatment is an alternative worth to try and has, in some cases, a dramatic and lasting effect.

Dimethyl Sulfoxide Antagonizes Hypotensive, Metabolic, and Pathologic Responses Induced by Endotoxin
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There is evidence that free radical activity may be important in the development of endotoxemia. Dimethyl sulfoxide is a hydroxyl radical scavenger that readily penetrates cell membranes. Using the conscious, instrumented rat this study tests the ability of dimethyl sulfoxide to modify the course of endotoxemia by evaluating cardiovascular, metabolic, and tissue injury parameters for 4 hr after the toxic insult. Treatment with dimethyl sulfoxide (6.5 g/kg; i.p.) evoked significant decreases in cardiac output, stroke volume, and central venous pressure and increases in heart rate, systemic vascular resistance, mean aortic pressure, respiration rate, and concentrations of blood glucose and plasma lactate. Following endotoxin (40 mg/kg, i.v. LD90-24 hr), dimethyl sulfoxide pretreatment blocked the early hypotensive episode but all other cardiovascular and respiratory responses to endotoxin were essentially unaltered. The pH, PO2, PCO2, and hematocrit were the same for both treated and untreated groups; however, dimethyl sulfoxide prevented the endotoxin-induced hypoglycemia and significantly attenuated the hyperlacticemia at 4 hr. The severe hemorrhagic intestinal pathology characteristic of this model of endotoxemia was not present in the dimethyl sulfoxide treated group. From these results we conclude that dimethyl sulfoxide caused significant cardiovascular alterations

conducive to impaired systemic blood flow. However, when administered prior to endotoxin, dimethyl sulfoxide induced significant beneficial modifications in the course of endotoxemia despite few improvements in cardiovascular function. The data indicate that the hydroxyl radical may be a mediator of tissue injury in this model of endotoxemia.

Dimethyl Sulfoxide in the Treatment of Inflammatory Genitourinary Disorders

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Abstract: Intravesical dimethyl sulfoxide (DMSO) has been used in the treatment of 213 patients with various inflammatory conditions involving the lower genitourinary tract, including intractable cystitis, radiation cystitis, chronic prostatitis, and chronic female trigonitis. Significant symptomatic relief has been achieved in the majority of patients so treated, and no systemic or local toxicity has been noted. Some patients failed to respond entirely, and others relapsed after DMSO treatment periods of several months, ultimately coming to augmentation cystoplasty or urinary diversion. However, because of its simplicity and ease of administration, intravesical DMSO therapy is recommended in all noninfectious or non-neoplastic inflammatory conditions presenting initially with severe symptoms, or that have failed to respond to conventional therapy.

Dimethyl sulfoxide in the management of patient with brain swelling and increased intracranial pressure after severe closed head injury

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Summary: The results of a prospective study on the effects of dimethyl sulfoxide (DMSO) in patients with severe closed head injuries causing brain edema and increase in intracranial pressure (ICP) are presented. 10 patients were selected and carefully analyzed according to Glasgow coma scale (GCS) scores and severity of brain edema. The results demonstrate that DMSO rapidly reduces the raised ICP, increases the cerebral perfusion pressure (CPP) and improves the neurological course and outcome without affecting the systemic blood pressure and patient responsiveness except only in one patient. We also point out that the rebound effect does not occur.

The use of dimethylsulfoxide (DMSO) for the treatment of intractable pain in surgical patients

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The use of dimethylsulfoxide (DMSO) as a medicinal agent was first reported in 1964.Since that time two publications encompassing the use of dimethylsulfoxide in patients with acute bursitis and chronic arthritis have appeared. The results in over 600 additional patients have been submitted for publication. The papers to date summarize the data following the topical administration of dimethylsulfoxide for the treatment of acute and chronic subacromial bursitis, chronic arthritis, acute musculoskeletal trauma, scleroderma, Dupuytren's contracture, superficial second- and third-degree burns, and postmastectomy lymphedema of the upper extremity. This presentation describes the results in 37 surgical patients treated with dimethylsulfoxide for intractable pain. "Intractable" is here defined as persistent pain despite at least one year of conventional therapy. In this study dimethylsulfoxide was applied for the therapy of phantom pain, tic douloureux, and posttraumatic or postoperative intractable pain.