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Medical use of dimethyl sulfoxide (DMSO).

Swanson Bn · Published 1985 · Medicine

TLDR There is no evidence that DMSO can alter progression of degenerative joint disease, and, for this reason, DMSO may be considered for palliative treatment only and not to the exclusion of standard antiinflammatory agents.

Abstract : DMSO is a clear odorless liquid, inexpensively produced as a by-product of the paper industry. It is widely available in the USA as a solvent but its medical use is currently restricted by the FDA to the palliative treatment of interstitial cystitis and to certain experimental applications. Cutaneous manifestations of scleroderma appear to resolve (albeit equivocally) following topical applications of high concentrations of DMSO. A limited number of small clinical trials indicate that intravenous DMSO may be of benefit in the treatment of amyloidosis, possibly by mobilizing amyloid deposits out of tissues into urine. Dermal application of DMSO seems to provide rapid, temporary, relief of pain in patients with arthritis and connective tissue injuries. However, claims for antiinflammatory effects or acceleration of healing are currently unwarranted. There is no evidence that DMSO can alter progression of degenerative joint disease, and, for this reason, DMSO may be considered for palliative treatment only and not to the exclusion of standard antiinflammatory agents. The safety of DMSO in combination with other drugs has not been established; neurotoxic interactions with sulindac have been reported. In experimental animals, intravenous DMSO is as effective as mannitol and dexamethasone in reversing cerebral edema and intracranial hypertension. An initial clinical trial in 11 patients tends to support this latter application. DMSO enhances diffusion of other chemicals through the skin, and, for this reason, mixtures of idoxuridine and DMSO are used for topical treatment of herpes zoster in the UK. Adverse reactions to DMSO are common, but are usually minor and related to the concentration of DMSO in the medication solution. Consequently, the most frequent side effects, such as skin rash and pruritus after dermal application, intravascular hemolysis after intravenous infusion and gastrointestinal discomfort after oral administration, can be avoided in large part by employing more dilute solutions. Most clinical trials of DMSO have not incorporated the components of experimental design necessary for objective, statistical evaluation of efficacy. Randomized comparisons between DMSO, placebo and known active treatments were rarely completed. Final approval of topical DMSO for treatment of rheumatic diseases in particular will require a multi-center, randomized comparison between high and low concentrations of DMSO and an orally-active, nonsteroidal antiinflammatory agent.(ABSTRACT TRUNCATED AT 400 WORDS)

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Multidisciplinary utilization of dimethyl sulfoxide: pharmacological, cellular, and molecular aspects.

N. Santos J. Figueira-Coelho J. Martins-Silva C. Saldanha Chemistry, Medicine · Biochemical Pharmacology · 2003

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New insights of dimethyl sulphoxide effects (DMSO) on experimental in vivo models of nociception and inflammation.

M. Colucci F. Maione M. Bonito A. Piscopo A. Di Giannuario S. Pieretti Medicine · Pharmacological Research · 2008

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Evaluation of the use of the solvent dimethyl sulfoxide in chemiluminescent studies.

C. Kahler Chemistry · Blood Cells, Molecules & Diseases · 2000

TLDR The effect of DMSO on the superoxide production of the different white blood cells, neutrophils, eosinophils, lymphocytes, and monocytes, after stimulation with phorbol myristate acetate (PMA), opsonized zymosan (OZ), and formylmethionylleucylphenylalanine (fMLP), was determined.[Expand](#)

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Pharmacology of dimethyl sulfoxide in cardiac and CNS damage

S. Jacob J. C. de la Torre Medicine · Pharmacological Reports · 2009

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B. Bakar H. Oruçkaptan +4 authors S. Muftuoglu Medicine · Neuroradiology · 2009

TLDR This experimental study suggests that NBCA, and various concentrations of onyx and DMSO have toxic effects on the neural tissues of rabbits when infused into the subarachnoid space.[Expand](#)

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Efficacy of Diminazene Aceturate with and without Levamisole or Dimethyl Sulfoxide in Reducing Organ Weight and Parasitemia in *T. congolense* Infected Rats

K. Eghianruwa S. Anika Medicine · 2012

TLDR Early relapse and high virulence of the Basa strain of *T. congolense* used may be responsible for the ineffectiveness of the three treatment protocols.[Expand](#)

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Dimethyl Sulfoxide-Induced Toxicity in Cord Blood Stem Cell Transplantation: Report of Three Cases and Review of the Literature

G. Ruiz-Delgado C. Mancías-Guerra +5 authors G. Ruiz-Argüelles Medicine · Acta Haematologica · 2009

TLDR 3 cases of DMSO-induced toxicities are described and the most common adverse reactions of the DMSO when used as a cryopreservation agent for the long-term storage of cord blood cells are reviewed.[Expand](#)

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Dimethyl sulphoxide: A review of its applications in cell biology

Biology, Chemistry · Bioscience Reports · 1994

Zhidong Yu P. Quinn

TLDR The action of dimethyl sulphoxide on the stability of the liquid matrix of cell membranes appears to be responsible for its effects and this appears also to be true for related effects on membrane permeability and fusion.[Expand](#)

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Intravesical treatments of bladder pain syndrome/interstitial cystitis

J. Neuhaus T. Schwalenberg Medicine · Nature reviews. Urology · 2012

TLDR Overall, botulinum neurotoxin A injection, intravesical sodium hyaluronate instillation and DMSO instillation seem to be the best-performing treatments, with response rates of 79%, 76% and 75%, respectively, and can be used effectively as second-line or third-line therapies for BPS/IC.[Expand](#)

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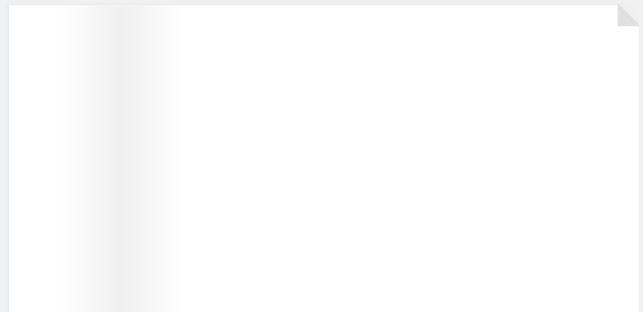
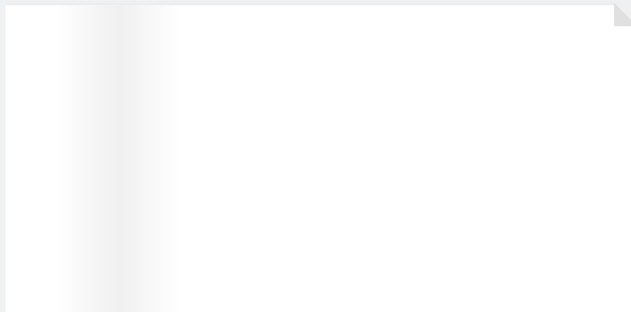
Evaluation of the neurotoxicity of DMSO infused into the carotid artery of rat.

B. Bakar E. A. Kose Sevilyay Sonal A. Alhan K. Kiliç I. Keskil Medicine · Injury · 2012

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