

### CLINICAL STUDY OF Bonharen® IVN

### Sodium hyaluronate in the active therapy of osteoarthrosis

#### INTRODUCTION

Sodium hyaluronate is a major component of synovial fluid and acts as a lubricant and shock absorber. Joint inflammation tends to be accompanied by reduced sodium hyaluronate content in the joint cavity. Sodium hyaluronate improves the health and functioning of articular soft tissues, rescues cartilage from degeneration and alleviates pain. The easiest way how to increase the concentration of hyaluronic acid in synovial fluid is by injection.

Intravenous application (Bonharen® IVN) is another mean of administering sodium hyaluronate but unlike intra-articular injections, there is no risk of the adverse reaction that could result from incorrect injecting. So the application is much more comfortable for veterinarians with same results as after IAT application.

The reason why Bonharen® IVN doesn't have to be applied directly to the joint is due to the presence of low molecular weight sodium hyaluronate. The biggest advantage of this form is transition directly from blood cells to the joint synovial fluid.

#### **METHODS**

The clinical study for the intravenous application of sodium hyaluronate (Bonharen® IVN) was conducted as a multicentric study on 137 patients at 14 veterinary institutions. The patient structure comprised 86 horses and 51 dogs with joint problems. These animals were examined before and after the study, and their physical problems are summarized in the graphic results.

# THERAPEUTIC RESULTS OF BONHAREN IVN IN ORTHOPEADIC INDICATIONS IN DOGS

Following the administration of Bonharen® IVN, 23 out of a total of 51 dogs recovered, improvements were observed in 22 cases and no effect was observed in 6 dogs. Significant improvements following the application of Bonharen® IVN were observed in 45 of the 51 dogs, i.e. in 88% of cases. The results obtained are in the following summarized graphic results.

	IMPROVED		RECOVERED		NO EFFECT	
ARTHRITIS	ਸਮ	25%	ਸ਼ਸ਼ਸ਼ਸ਼ਸ਼	75%		0%
ARTHROSIS	######## #####	57%	ਸਮਸਮਸਮ	26%	หหหห	17%
DISTORSIONS	ਸਮ	100%		0%		0%
BACKBONE DEFECT		0%	אאאאא	100%		0%
JOINT INJURY	ਸਮ	67%	ਸ	33%		0%
TENDOVAGINITIS	ਸਮ	22%	ההההה	56%	หห	22%
MYOSITIS	Ħ	100%		0%		0%
IN TOTAL	43%		45%		12%	}

## THERAPEUTIC RESULTS OF BONHAREN IVN IN ORTHOPEADIC INDICATIONS IN HORSES

Following the administration of Bonharen® IVN, 30 out of a total of 86 horses recovered, improvements were observed in 51 cases and no effect was observed in 5 horses. Significant improvements following the application of Bonharen® IVN were observed in 81 out of the 86 horses, i.e. in 94% of cases. The results obtained are in the following summarized graphic results.

	IMPROVED	RECOVERED	RECOVERED		NO EFFECT	
ARTHRITIS	TATATATA 62	مومومومومومومومو	27%	مارمارمارما	11%	
ARTHROSIS	مرمومومومومون	निर्मानिर्मा %	38%	1	6%	
BACKBONE DEFECT	וווויו 60	0% him	40%		0%	
JOINT INJURY	<b>&gt;</b> →	3%	67%		0%	
MYOSITIS	0	D% >	100%		0%	
TENDOVAGINITIS	מתחתחתחת 62	न्त्रत्यस्यस्य	38%		0%	
IN TOTAL	59%	35%		6%		

#### **CONCLUSIONS**

Bonharen® IVN had a positive effect on the condition of horses in 94% of cases and on the condition of dogs in 88% of cases. In 14 years of use, there has been no adverse reaction to Bonharen® IVN.

Bonharen® IVN significantly improves joint mobility, reduces hobbling, diminishes or dissipates joint and tendon oedema, alleviates the pain caused by passive movements, and results in improvements in assessments of functions. Bonharen® IVN has also been shown to have a comparably long-lasting effect (12 months) and patients are able to make a speedier return to sport or work.

