AB0983 HYALURONAN DERIVATIVE HYMOVIS® INCREASES CARTILAGE VOLUME AND TYPE II COLLAGEN TURNOVER IN OSTEOARHRITIC KNEE: DATA FROM MOKHA STUDY

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Background: Intra-articular injections of hyaluronan represent one of the well-accepted standard of care for treating symptomatic knee osteoarthritis (OA). Until now, not much is known about the structural-modifying effect of this treatment justifying this pilot study.
Objectives: This exploratory non-controlled study aims to study effets of HYMOVIS on imaging, bilological and clinical variables.
Methods: Forty six patients with symptomatic knee OA (mean age 61.4 years [min.35-max.80; 67.4% female; Kellgren and Lawrence grade II and nd III (63% and 37%, respectively); mean BMI 30.6 kg/m2] were enrolled in this open-label, prospective, multicenter, pilot study. Patients received two treatment cycles of intra-articular injections (3 mL) of Hymovis (8 mg/mL of the 500–730 kDA hyaluronic acid hexadecylamide) at 6 months interval. Each treatment cycle corresponded to two intra-articular injections one week apart. All patients had MRI of the target knee at baseline and 1 year, and blood samples (D30, D90, D180, D210 and D360) to assess joint biomarkers. The primary outcome was the change in type II collagen-specific biomarkers (Coll2–1, Coll2–1NO2 and CTX-II) after Hymovis treatment versus baseline. Secondary endpoints included levels changes in AGG, COMP, PIINP, MMP-3, MPO and IL-6 serum biomarkers, the ratio Coll2–1/PIINP, CTX-II/PIINP, MRI cartilage volume and KOOS index.
Results: Coll2–1 serum levels significantly increased overtime ($0.05<P<0.001$) while Coll2–1NO2 levels was only increased at D360 ($p<0.05$). Serum PIIANP levels also progressively and significantly enhanced with time ($p<0.001$). In contrast, other serum biomarker levels including CTX-II, AGG, COMP, MMP-3, MPO or IL-6 did not change significantly overtime. Interestingly, the ratios Coll2–1/PIINP and CTX-II/PIINP decreased ($p<0.005$), indicating a decrease of cartilage catabolism. Compared to baseline value, MRI cartilage volume increased in lateral femoral and lateral trochlea compartments ($p<0.05$) and not in medial compartment. Interestingly, WORMS effusion score, an indicator of synovitis, significantly decreased ($p<0.016$). Finally, global KOOS score and subscales significantly increased overtime ($p<0.001$) while pain at rest, walking pain and patients or investigators global assessment of disease activity decreased ($p<0.001$). The safety profile was favourable with a low incidence of injection-site pain.
Conclusions: Hymovis, a well-tolerated intra-articular treatment, significantly enhanced type II collagen turnover as suggested by the increase in Coll2–1 and PIINAP levels and cartilage volume observed by MRI in lateral knee compartment. Importantly, this study highlighted the potential symptomatic benefit of Hymovis on pain and function and provides critical information for the design of a larger phase III clinical trial.
Disclosure of Interest: None declared
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AB0984 CADMIUM TOXICITY AS A PROBABLE CAUSE OF SMOKING INDUCED BONE LOSS

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Background: : Cigarette smoking supposed to be a risk factor for osteoporosis. There is an inverse relationship between smoking and both bone mass and fracture risk. Tobacco smoking is the most important single source of cadmium exposure in the general population. The absorption of cadmium from the lungs is much more effective than that from the gut.
Objectives: : This study was designed to evaluate the effect of cigarette smoking on bone mineral density, due to cadmium toxicity.
Methods: : this study was carried on 100 persons, selected from AL-Azhar university hospital and divided into three groups: group I: included 40 persons with active smokers; group II: included 40 persons with passive smokers and group III included 20 nonsmokers. All persons were subjected to full history taking, thorough clinical examination, routine lab tests, serum and urinary cadmium and lead, and bone mineral density was measured by DEXA.
Results: : Serum and urinary cadmium and lead were statistically significantly higher in group I in comparison to groups II or III and in group II in comparison to group III. Also, there was statistically significant decrease of BMD in group I in comparison to either group II or group III and in group II in comparison to group III. There was an inverse statistically significant correlation between serum and urinary cadmium and bone mineral density.

Abstract AB0984 – Table 1. Comparison between studied groups as regard serum and urinary cadmium levels

		Mean	S. D	Minimum	Maximum	F	P
Serum cadmium (µg/l)	Group I	0.449	0.287	0.18	1.80	27.92	<0.001(S)
	Group II	0.232#	0.040	0.16	0.32		
	Group III	0.094*	0.047	0.01	0.16		
Urinary cadmium (µg/l)	Group I	0.555	0.304	0.30	2.00	27.16	<0.001(S)
	Group II	0.335#	0.042	0.26	0.42		
	Group III	0.181*	0.052	0.11	0.26		

*=statistically significant decrease in comparison to group I or group II
#=statistically significant decrease in comparison to group I
Conclusions: : Results of the present study revealed that: there are harmful effects of smoking on the bone mineral density and it may be occurred by direct (increased blood and urinary levels of both cadmium and lead) or indirect effects (effects of both renal and liver functions) of cadmium and lead.

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AB0985 PERSISTENCE AND ADVERSE EVENTS IN PATIENTS TREATED WITH DENOSUMAB

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Background: Denosumab (DNS) is a human monoclonal antibody directed against RANKL, which blocks the maturation of the osteoclast, inhibiting bone resorption. The binding of DNS to RANKL suppresses bone resorption mediated by osteoclasts and decreases bone turnover.