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PHASE 2A STUDY IN PATIENTS WITH MODERATE-TO-SEVERE RHEUMATOID ARTHRITIS AND INADEQUATE RESPONSE TO MTX AND/OR ANTI-TNFA THERAPEUTICS SHOWS THAT ORAL ABX464 50 MG ONCE DAILY IS SAFE, WELL TOLERATED AND SHOWS PROMISING EFFICACY RESULTS

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Background: ABX464 upregulates the expression of the anti-inflammatory microRNA miR-124 and is a first-in-class drug candidate as an oral treatment for moderate-to-severe Rheumatoid Arthritis (RA).

Objectives: This phase 2a randomized, double blind, placebo controlled, parallel group 12-week study evaluated the safety and preliminary efficacy of ABX464 (50 and 100mg q.d.), in combination with methotrexate (MTX) in 60 patients (1:1:1 ratio) with moderate-to-severe active RA who have inadequate response to MTX or/and to an anti-TNF α therapy. Patients who completed the 12-week induction phase could roll over into a 52-week open-label maintenance study to evaluate the long-term safety and efficacy of 50 mg q.d oral ABX464 in RA.

Methods: The primary end point was the safety of ABX464; efficacy endpoints included the proportion of patients achieving ACR20/50/70 responses, disease activity scores (DAS28, SDAI, CDAI), EULAR response, DAS28 low disease activity (DAS28-CRP $\leq$ 3.2) or remission. Blood samples from patients were used to measure the expression of miR-124 and the relative concentrations of cytokines (baseline and week 8).

Results: Patients baseline characteristics were well balanced in terms of disease severity and demographics (mean $\pm$ SD DAS28-CRP: 5.43 $\pm$ 0.78; RA duration: 6.43 $\pm$ 7.43 years). ABX464 50 mg was safe and well tolerated. Two serious adverse events (SAEs) were reported (one on placebo group and one on ABX464 100 mg). Eleven patients were withdrawn for AEs (9 patients on 100 mg, 1 on 50 mg and 1 on placebo). An increased incidence of largely mild-to-moderate gastrointestinal AEs in the 100 mg treatment group led to a higher drop-out rate of patients. The nature of these AEs was consistent with what has been observed in more than 1023 subjects who have so far been treated in other clinical trials with ABX464 across different indications. No cases of opportunistic infection, no malignancies and no death were reported. Although the sample size of this proof-of-concept study was not powered to show efficacy, multiple early efficacy endpoints showed signs of promise with the ABX464 50 mg daily dose. Compared to placebo, ABX464 50 mg showed significantly higher proportions of patients achieving ACR20 and ACR50 responses at week 12 in the per protocol population (PP). DAS28-CRP and

DAS28-ESR decreased significantly (Intent-to-Treat Population, ITT) and rates of categorical DAS28-CRP response (PP) or CDAI remission (ITT) increased significantly on ABX464 at week 12 (Table 1). Compared to placebo, a significant upregulation of miR-124 expression and a decrease in IL-6 blood levels were observed for every patient dosed with ABX464. 40 patients enrolled in the ongoing open-label maintenance study with ABX464 50 mg q.d. At week 52, the drop-out rate of patients was 44 % (17/39), including 7 drop-outs due to AE (18 %). Preliminary maintenance efficacy data, defined as Low Disease Activity, were obtained from 22 patients who reached 52 weeks of treatment: 44 % patients achieved LDA according to ITT.

Conclusion: Efficacy and safety findings of the first-in-class drug candidate ABX464 warrant further exploration at 50 mg q.d. or less as an oral treatment for RA patients.

Disclosure of Interests: Claire Daïen Speakers bureau: Abivax, Consultant of: Abivax, Abbvie, Amgen, BMS, Fresenius-Kabi, MSD, Novartis, Pfizer, Sandoz, Sanofi, Roche-Chugai, UCB, Grant/research support from: punctual links or research grant from Abbvie, Amgen, BMS, Fresenius-Kabi, MSD, Novartis, Pfizer, Sandoz, Sanofi, Roche-Chugai, UCB, Marek Krogulec: None declared, Paul Gineste Employee of: Abivax, Jean-Marc Steens Employee of: Abivax, Laurence Desrois Du Roure Employee of: Abivax, Sophie Biguenet Employee of: Abivax, Didier Scherrer Employee of: Abivax, Julien Santo Employee of: Abivax, Hartmut Ehrlich Employee of: Abivax, Patrick Durez: None declared

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GENICULAR NERVE BLOCK IN JUVENILE IDIOPATHIC ARTHRITIS: A RANDOMIZED CLINICAL TRIAL

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Background: Genicular nerve block (GNB) showed promising results in improving pain, function, and inflammation in adults with rheumatoid arthritis suffering from persistent knee arthritis (1).

Objectives: This study aimed at testing the effect of GNB in juvenile idiopathic arthritis (JIA) patients with unilateral persistent knee arthritis on pain, function, range of motion, and inflammation parameters.

Methods: N=104 JIA patients diagnosed according to the ILAR criteria with persistent unilateral knee arthritis. They were assigned randomly into two groups; group I received nerve block, group II received intra-articular triamcinolone. Visual analogue scale, SOLAR scoring system, and Lysholm scores were assessed at 0, 2, and 12 weeks intervals. Tenderness and swelling were evaluated by a semi-quantitative score at the same intervals.

Results: VAS, tenderness, swelling, and SLOAR scores were significantly decreased after 2 weeks of interventions in both groups, but this reduction was greater in GNB group regarding VAS and tenderness, while was greater in steroid group regarding SOLAR and swelling. At 12 weeks, all these outcome measures revealed better values in GNB group in comparison to steroid group, but this was significant only for VAS. Moreover, Lysholm score was significantly increased in both groups at 2 and 12 weeks intervals with higher values in steroid group versus GNB group at 2 weeks.

Conclusion: Nerve block was able to control pain, improve function and inflammation outcome measures of the knee joint in JIA patients. Although steroid achieved better results after 2 weeks, GNB achieved a better long-term improvement after 12 weeks.

Table 1. Efficacy endpoints.

	Placebo		50 mg		100 mg	
	PP	ITT	PP	ITT	PP	ITT
	(n=19)	(n=20)	(n=16)	(n=21)	(n=7)	(n=19)
Early discontinuations due to AE	1		1		9	
ACR20 n (%)	4 (21%)	4 (20%)	9 (56%) *	9 (43%)	3 (43%)	3 (16%)
ACR50 n (%)	1 (5%)	1 (5%)	5 (31%) *	5 (24%)	2 (29%)	2 (11%)
ACR70 n (%)	1 (5%)	1 (5%)	4 (25%)	4 (19%)	1 (14%)	1 (5%)
DAS28-CRP	-0.63	-0.60	-1.79 *	-1.41 *	-1.94 *	-0.72
Mean change from baseline DAS28-ESR	-0.65	-0.59	-1.86 *	-1.43 *	-2.0 **	-0.74
Mean change from baseline Low Disease Activity (DAS28-CRP $\leq$ 3.2) n (%)	2 (11%)	2 (10%)	4 (25%)	4 (19%)	3 (43%)	3 (16%)
Categorical DAS28-CRP response n (%)	8 (42%)	8 (40%)	14 (88%) **	14 (67%)	6 (86%) *	6 (32%)
CDAI $\leq$ 10 n (%)	2 (11%)	2 (10%)	5 (31%)	5 (24%)	3 (43%)	3 (16%)
CDAI Remission n (%)	0	0	3 (19%) *	3 (14%) *	0	0

* P < 0.05, ** P < 0.01 Chi-squared test ABX-464 versus placebo