

## INTRODUCTION

Knowledge related to expected peak concentrations of apixaban in children and adolescent populations is very scarce, since it has only recently been approved for treatment in pediatric population.

## AIM

To compare peak plasma concentrations of apixaban in adolescents and adults.

## METHOD

Innovance heparin (Siemens Healthineers, Germany) calibrated with apixaban calibrators (Hyphen BioMed, France) was used for quantitative determination of apixaban concentration.

The study included plasma samples from adult patients (N=80; 47-89 yrs) treated with standard dose (2x5 mg/day) and from adolescents (N=59; 13-22 yrs) treated with two dosing regimens: 2x2.5 mg/day (N=38) and 2x5 mg/day (N=21).

Blood samples were taken two to four hours after drug administration in order to obtain peak apixaban concentrations.

Statistical analysis was done using Wilcoxon test by MedCalc Statistical Software version 11.5.1.

## RESULTS

Concentrations of apixaban showed significantly lower peak values in adolescents treated with 2x2.5 mg/day compared with those treated with 2x5 mg/day (P=0.003), as well as compared with adults treated 2x5 mg/day (P<0.001). On the contrary, peak concentrations between adolescents and adults treated with the same standard dose of 2x5 mg/day did not differ (P=0.937) (Table 1 and Figure 1). In both populations, adolescents and adults, treated with the same standard dose of 2x5 mg/day, peak concentrations showed very good agreement with the published expected values in adult patients.

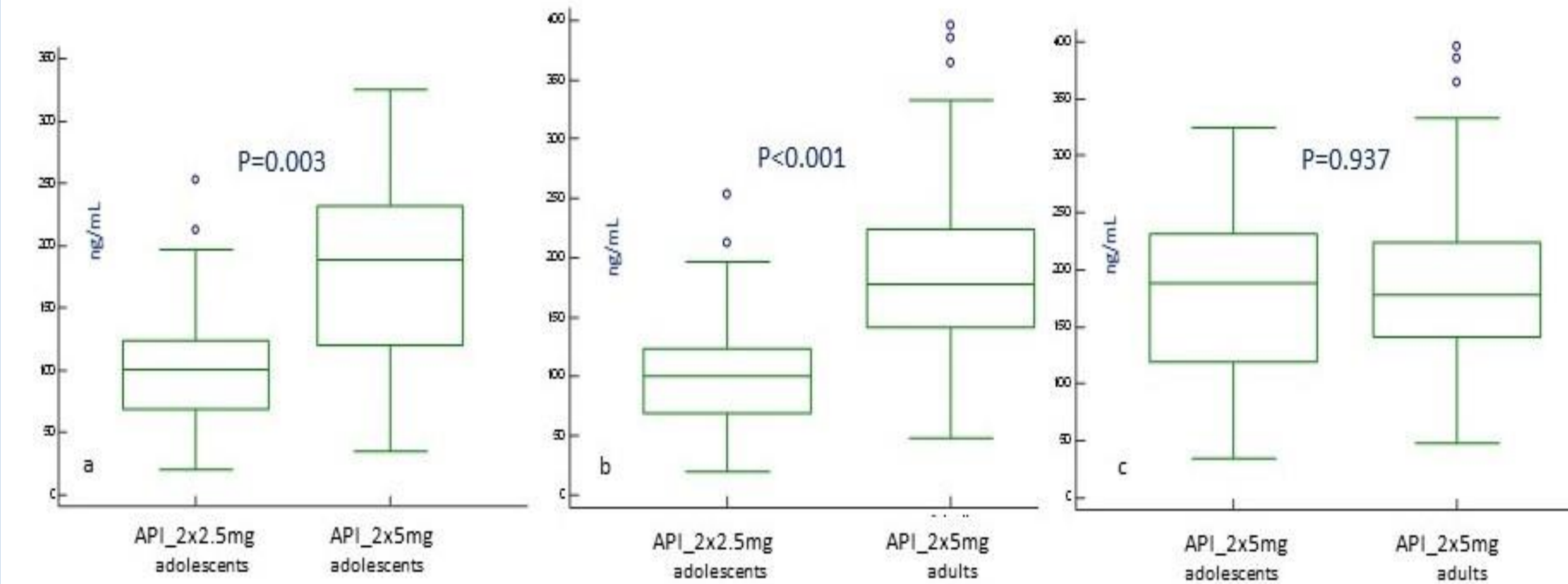


Figure 1. Differences between apixaban concentrations in adolescents and adults depending on dose regimens: adolescents 2x2.5 and 2x5 mg/day (a), adolescents 2x2.5 and adults 2x5 mg/day (b) and adolescents 2x5 and adults 2x5 mg/day (c).

Table 1. Results of apixaban concentrations in adolescents and adults.

	Adolescents	Adolescents	Adults
Apixaban dose (mg/day)	2 x 2.5	2 x 5	2 x 5
N	38	21	80
Peak concentration, ng/mL	101 (73 – 110)	189 (137 – 229)	179 (159 – 195)
Median (95%CI)	69 - 124	120 - 232	141 - 224
IQR			
P	0.003		
		0.937	
Expected published values (ng/mL) in adults**	<0.001*		
	Non valvular atrial fibrillation: 171; 91 - 321 Treatment of PE/VTE: 132; 59 - 302		

IQR = interquartile range; P< 0.05 was considered statistically significant;

\* P value between adolescents treated with 2x2,5 mg and adults treated with 2x5 mg/day;

## CONCLUSIONS

Peak plasma concentrations of apixaban in adolescents depend on the dose regimen (2x2.5 vs. 2x5 mg/day) showing roughly a twice lower values in plasma of adolescents treated with a twice lower doses. Further, peak concentrations in adolescents treated with standard dose regimen of 2x5 mg/day are completely comparable with values in adult patients with the same dosing regimen as well as with the expected values published for adult patients.

## REFERENCES

GOSELIN ET AL. THROMB HAEMOST 2018;118:437- 50.

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## CONTACT INFORMATION

ivana.celap@gmail.com; margeticsandra@gmail.com