

Methylphenidat: Studie zu Nachweiszeiten



Detection period of urinary metabolites of methylphenidate

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Methylphenidate is prohibited in sports in competition. The therapeutic use out of competition is not prohibited. In doping control the administration of methylphenidate is detected by the analysis of methylphenidate and ritalinic acid in urine. The question is, when the application of methylphenidate has to be discontinued to prevent an adverse analytical finding for the above mentioned urinary substances in doping control. To answer this question, urine specimens of 5 patients, suffering from hyperactivity Syndrome (three boys, 15, 11, 8 years old and two girls both 10 years Old), were collected. The participants were taking methylphenidate continuously and stopped the application after the administration of different amounts of methylphenidate (5 - 54 mg). All urine samples were collected till 68-92 hours after the last application. The samples were analysed with gas-chromatography/mass spectrometry (GC/MS) for methylphenidate and with liquid chromatography/ tandem mass spectrometry for ritalinic acid. The detailed results are presented in Table 1. Only in one volunteer methylphenidate was detected longer than 48 hours. Ritalinic acid was detected in all volunteers for more than 72 hours. After 72 hours all volunteers showed concentrations of ritalinic acid below the minimum required Performance limit of the WADA of 300 ng/ml. Based on these results the administration of methylphenidate is recommended to be discontinued at least 4 days before competition

Tab 1: Urinary concentrations of methylphenidate and ritalinic acid after cessation of application of different amounts of methylphenidate

Patient	Age/Sex	Medication and dose of	Time after application	Methylphenidate	Ritalini acid
		methylphenidate	[h]	[ng/ml]	[ng/ml]
1	10 f	Ritalin / 10 mg	19	661	28326
			43	0	422

			68	0	41
			92	0	0
2	15 m	Concerta / 54 mg	6,3	43	39791
			24	19	18692
			48,5	0	4634
			72	0	154
3	11 m	Concerta / 36 mg	ca. 1	42	27021
			24	19	25939
			48	0	2820
			72	0	223
4	8 m	Medikinet / 5 mg	1	115	24761
			16	15	5525
			40	6	848
			68	0	26
5	10 f	Ritalin / 10 mg	ca. 1	395	17687
			24	0	9076
			48	0	903
			72	0	130

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