

additional RMMs. The proportion of recommendations that are measurable using routine care databases is relatively low at this moment and could be improved by formulating key elements with objectives requiring a specific action. This should be considered during the design of 'Conditions and requirements of the marketing authorization regarding safe drug use'.

#### 467. Difference in Rates of Abuse Following Reformulation of Extended Release (ER) Oxycodone Using Data from the Radars® System Poison Center Program

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**Background:** In August 2010, Purdue Pharma introduced a reformulated extended release (ER) oxycodone product (ORF) that is intended to deter crushing and forms a gel when dissolved, with the goal of deterring abuse through routes that require tampering.

**Objectives:** This study examines whether there was a decline in rates of abuse of ER oxycodone reported to poison centers participating in the RADARS® System after introduction of ORF. Poison centers participating in the program covered 90% of the US population in the 3rd quarter of 2011.

**Methods:** Mentions of ER oxycodone and other prescription products ("exposures") were obtained on a quarterly basis from participating poison centers. Intentional exposures were coded abuse or non-abuse (misuse, self-harm, withdrawal, or unknown). Rates were calculated for abuse and for non-abuse intentional exposures per 100,000 population and per 1,000 unique recipients of dispensed drug (URDD) for each year/quarter. 10/2008 through 9/2010 was considered the period before and 10/2010 to 9/2011 was considered the period after introduction of ORF. The mean abuse rates for ER oxycodone as well as other prescription opioid drugs were compared before and after introduction of ORF using negative binomial regression.

**Results:** There was a 34% (95% CI: 25–42%) decline in the average abuse rate of ER oxycodone per 100,000 population and 30% (95% CI: 20–38%) decline in the rate per 1,000 URDD after the introduction of ORF. These declines were greater than changes observed for other opioids excluding ER oxycodone and declines observed in ER oxycodone non-abuse rates.

**Conclusions:** Our results suggest that the introduction of the reformulation was followed by a decline in rates of abuse of ER oxycodone products manufactured by Purdue reported to poison centers participating in the

RADARS® System. The observed decline for abuse was greater than that for other prescription opioids and that for non-abuse intentional exposures for ER oxycodone.

#### 468. Abstract withdrawn by author.

#### 469. Use of Recently Developed Substances as Doping in University Athletes and Risk of Adverse Reactions

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**Background:** Success of modern pharmaceuticals, development of new pharmacological groups and medicines form background conducive to use of new agents as doping in sport. Additional unfavorable factor that influence on doping abuse in Ukraine is a lack of modern laboratories. The use of new substances in not-professional athletes, i.e., in university sport is not well studied.

**Objectives:** To study incidence of new substance use as doping in university athletes and to determine the concrete drugs used by them.

**Methods:** Two hundred twelve sportsmen which participate in team sport (football, volleyball and basketball), runners, gymnasts, boxers and wrestlers were anonymously asked about drugs they used during training and competition. We used own questionnaire focused on effects of medicine that is taken by sportsman and its side effects.

**Results:** We have found that 29 (13,68%) asked persons took or take a drug "to improve their professional skills". No one medicine mentioned in answers is included in the 2011 Prohibited List (International standard) of World anti-doping agency (WADA). The most frequent drug (18 cases – 8,49%) taken by sportsmen is trimetazidine that improve myocardium metabolism and increase its tolerance to hypoxia. In all cases it was chosen by athletes of team sports. Another metabolic agent thiotriazolone was used in five (2,36%) cases (four football players and one boxer). Ivabradine was mentioned in six (2,83%) answers (three boxers, two wrestlers and one runner) and silymarin - in two answers (wrestlers). Two questionnaires contain information about rash caused by thiotriazolone, 1 - about rash caused by trimetazidine and one about tachycardia due to trimetazidine use.

**Conclusions:** University sportsmen is high risk group of off-label use of modern medicines as doping. The use of trimetazidine, thiotriazolone, ivabradine and silymarin in athletes is not prohibited but need more detailed discussion about inclusion of them in WADA warning list or in list of prohibited substances because they may favor unfair competition and due to risk of adverse reactions be