

## НОВЫЙ ПЕРСПЕКТИВНЫЙ ПРЕПАРАТ В ЛЕЧЕНИИ ВИЧ/СПИД «PRO 140»

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Проблема борьбы с ВИЧ весьма актуальна на данный момент не только в отдельных конкретных странах, но и во всем мире в целом. Всем хорошо известна антиретровирусная терапия, которая призвана контролировать вирусную нагрузку, однако имеет множество побочных эффектов и требует от пациентов ежедневного приема большого количества препаратов.

**Цель данного исследования** – осветить новое направление, которое связано с предупреждением фузии вируса к тропным клеткам, в лечении ВИЧ/СПИД.

Для поиска новых методов борьбы с вирусом ВИЧ в 2002 году была создана компания CytoDyn, основной задачей которой является создание эффективного средства борьбы с вирусом. Компания проводит III-х этапное исследование нового препарата «PRO 140». Это вещество представляет собой новый класс препаратов – ингибиторы фузии, и является моноклональным антителом IgG4, которое направлено против ко-рецептора CCR5. Данный ко-рецептор вирус ВИЧ использует для проникновения в клетку. «PRO 140», блокируя данный ко-рецептор, предотвращает проникновение ВИЧ (R5-ый субтип, самый распространенный) в Т-клетки. Важной особенностью препарата является то, что он не влияет на реакции иммунной системы, опосредованные использованием CCR5-ко-рецепторов, не имеет значительных побочных эффектов и прост в использовании – подкожное введение каждую неделю. 28 января 2016 года компания CytoDyn объявила о полном подавлении вируса во время Пб (расширенной) фазы тестирования у 11 пациентов, которые еженедельно совершали инъекции препарата на протяжении 14-17 месяцев. Высококчувствительным (с точностью до одной копии) тестом на РНК вируса, было установлено, что у 7 из 10 пациентов вирусная нагрузка составила 0,4 копии/мл. Известный американский актер Чарли Шин, публично рассказавший о своем инфицировании ВИЧ, накануне Всемирного дня борьбы со СПИД-ом заявил о том, что также принимал еженедельные инъекции «PRO 140», и вирус был полностью подавлен (вирусная нагрузка была снижена практически до нуля).

**Выводы:** препарат «PRO 140» является весьма перспективным средством лечения ВИЧ/СПИД и после проведения III фазы, где препарат используется как вспомогательная терапия, можно ожидать его массовое применение уже к концу 2017 года.

## INTEGRAL EVALUATION OF THE PROFESSIONAL RISKS FOR THE EMPLOYEES OF THE FERROUS METALLURGY ENTERPRISE

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The magnitude of the occupational risk can be judged by the integral index that integrates its frequency and difficulty in the same numerical value.

**The purpose and objectives of the study:** The evaluation of the occupational risks for the employees of the ferrous metallurgy enterprises by the indicators of the integral index of the occupational risk (Ir).

**The methods and their application :** The evaluation of the occupational risks was conducted according to the data of the occupational morbidity at the ferrous metallurgy enterprise in the Zaporozh'ye region. The assessment of the occupational risk was based on the indicators such as the level of the risk factor, the duration of its action and occupational diseases.

**The main results:** It was determined that in the blast furnace shop the largest Ir index was registered by the master of the section – 3,3, for the miner of the blast furnace Ir was 3,2, for the gasman of the blast furnace and boring machine operator Ir – 1,7 and 1,2 respectively, Ir for the fitter – repairman of the blast furnace shop – 0,6. In the open-hearth shop the largest Ir were registered in

such professions as steel smelter, steelmaker of the blast furnace and electrician for repair and maintenance of electrical equipment – 3,0, 1,7 and 1,6 respectively, for the operator of the collapse machine  $I_r$  was 0,9, also there was calculated the index for the refractoryman and for the machinist of the crane of metallurgical production – 0,6 and 0,5 respectively. In the agglomeration shop among the professions which had the largest  $I_r$  are the heater – 3,5, the bunkerer – 2,8, the foreman – 2,2, the electrician for repair and maintenance of electrical equipment – 1,7, the gas welder – 1,0 and the man engaged in agglomeration – 0,9. In the other shops the index of the professional risk was lower than 1, except the control panel operator – 1,01 ( crimping shop ), the man, who controls the condition of the hot rolling steel – 1,73 ( hot rolling shop ) and the gas welder – 1,07 ( metallurgical furnace repair shop ).

## HYGIENIC EVALUATION OF MACHINE SHOP WORKERS

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**Research objectives:** To conduct hygienic evaluation of working conditions of the machine shop industry workers on the leading enterprises.

**Methods and applications:** There were analyzed 123 reports, including 38 reports of air research of a working area, 55 reports of meteorological factors research, 30 research protocols of the noise load.

**Main results:** The analysis of indicators of microclimate found that in the warm period, the average of a temperature was  $18,07 \pm 2,050C$ , humidity -  $46,06 \pm 3,39\%$ , air velocity -  $0,4 \pm 0,04$  m/s. In the cold season temperature averaged to  $12,69 \pm 0,570C$ , relative humidity and air velocity -  $37,13 \pm 2,2\%$  and  $0,55 \pm 0,29$  m/s. Evaluation of a noise in the workplace of a turner – the noise in level of  $84,24 \pm 1,02$  dB, so conditions can be classified as third class with first hazard degree. According to evaluation of the working area air it was found that there are chemicals in the air, but they do not exceed the maximum permissible concentration, so due to the presence of substances with unidirectional action (carbon monoxide, sulfur dioxide) working conditions was referred to third class with first hazard degree. The content of silica dust in the air of the working area doesn't exceed the MCL and averaged  $3,98 \pm 0,4$  mg/m<sup>3</sup>. According to the evaluation of severity and intensity of a turner work, it was found that the working process include lifting and transporting loads up to 8 kg, static load is 345 kg\*s with one hand, two hands - 10890 kg\*s, is in an inclined position to 300 - 28.7% of the working shift and more than 300 - 17.3% working shift, precision work with high level of visual concentration with duration to 17.1% of working shift, 42% of the working shift include the monitoring of the production process without action, so, because of the evaluation of the work intensity, the working condition can be classified as third class with first hazard degree.

Thus, conditions of turner workplace according to Hygiene classification GN 3.3.5-8-6.6.1-083-2001 p. is a condition of third class with first hazard degree.

## INDICATORS OF PHYSICAL DEVELOPMENT OF CHILDREN IN CONDITIONS OF ATMOSPHERIC POLLUTION OF METALLURGICAL CITIES

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**Topicality.** In modern industrial cities the formation of children's health is influenced by a set of conditions; and air pollution takes a leading place here.

**Aim and objectives.** Hygienic evaluation of indicators of physical development of children living in conditions of anthropogenic pollution of atmospheric air of modern industrial cities (on the example of Zaporizhzhia).

**Materials and methods.** To study physical development of children, medical examination of school-age children of the 1st and 2nd health groups in 3 regions of Zaporizhzhia has been conducted: