

**Introduction:** Students in medical disciplines are looking for new learning strategies. Computer applications are becoming more popular as they use a variety of methods to improve efficiency of studying. One of them is spaced repetition algorithm like Super-Memo.

**Methods:** We prepared web application which shows the photography of histological slide. Students had to decide if they have recognized the slide and the program was measuring time of each answer. Then the algorithm allocated new slide to display.

Users were randomly divided into two groups: study – where difficult slides were shown more frequently (SuperMemo2-based algorithm) and control – where the slides were displayed randomly.

Quality of the student's answers was evaluated according to the 6-point scale, where 0 means incorrect answer, and from 1 to 5 – correct answer depending on time.

We also took into consideration results of histology practical exam (0–15 points).

The level of statistical significance was set at  $p < 0.05$ .

**Results:** The study involved 204 first year medical students. The study group ( $n=98$ ) and control ( $n=106$ ) were similar in terms of the average number of responses in application (901 vs. 858;  $p=0.73$ ).

We have shown a statistically significant difference which indicate obtaining higher examination score by students who used our application – 11.8 vs. 10.98 ( $p=0.016$ ).

There was no superiority of spaced repetition algorithm over the random allocation of slides, based on the examination results (11.7 vs. 11.9;  $p=0.73$ ).

**Conclusion:** The usage of computer programs can be a valuable complement to traditional teaching methods. As we showed in this study it may have a measurable effect on examinations results of the students.

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## PS008

### The frequency of Human Parvovirus B19 infections in Vojvodina



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**Aim:** Determinating the seroprevalence of IgG antibodies among residents of Vojvodina, as well as the incidence of acute infections in different age groups and with different diagnoses, especially in women of generative age and pregnant women.

**Introduction:** Human Parvovirus B19 is a cause of infections in patients of all age groups. Clinical manifestations vary from asymptomatic to manifest infections such as erythema infectiosum, arthropathy, heart problems, and infections in immunodeficient patients. Acute infections during pregnancy present a distinct problem, which can result in intrauterine fetal death or hydrops fetalis.

**Methods:** The data presented in this study are the result of serological testing for the presence of HP-B19 infections performed at the Institute of Public Health of Vojvodina, Centre for Virology, in the period from November 2015 to November 2016. Detection of specific IgG and IgM antibodies was completed by analysing 472

serum samples. Samples were tested using the ELISA test manufactured by VIRION, Germany, in the VIRION Analyzer I-2P device.

**Results:** Of the total number of tested subjects, an acute infection was detected in 10.8% of the cases (11.7% of pregnant women, and 7.14% of children). An acute infection was confirmed in 13.9% of the patients in a febrile state, and 7.1% of the patients diagnosed with arthritis, immune deficiency, and heart failure. Seroprevalence of IgG antibodies was confirmed in 42.8% of the tested subjects, 36.8% of pregnant women, 60.78% of non-pregnant women of generative age, and 11.03% of children. In the total sample, 46.4% of the results were negative.

**Conclusion:** It can be concluded that Human Parvovirus B19 exist and circulates in the population of Vojvodina. The use of rapid serological tests enables a specific etiological diagnosis, timely implementation of appropriate infection control measures, and an appropriate treatment of patients, especially those belonging to high risk groups like pregnant women are.

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## PS211

### E-cigarette: An effective tool to quit smoking or an additional source of nicotine?



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**Aim:** We sought to evaluate the effectiveness of e-cigarette use as a tool to quit or reduce smoking.

**Introduction:** The electronic cigarettes (known as an “e-cigarettes”) gaining on popularity, especially among young people. Available evidence regarding the relationship between e-cigarette usage as a tool in smoking cessation are inconsistent.

**Methods:** A population based survey was performed, in a group of 3800 students from three Universities in Katowice, Poland. Self-prepared, previously validated questionnaire, included questions on e-cigarette smoking habits.

**Results:** Completed questionnaires were obtained from 3000 students (response rate 78.9%; mean age =  $21.5 \pm 2.1$  yrs) of which 70% were female (F) and 30% were male (M). E-smoking was declared by 3.5% of respondents (F: 3%, M: 4.9%;  $p=0.01$ ), wherein 1.5% of respondents smoked only e-cigarettes (F: 1.3%; M: 1.8%;  $p=0.3$ ) and 2.4% of subjects were dual smokers (F: 1.6%; M: 3%;  $p=0.01$ ). Almost one-third (33.7%) of e-smokers used e-cigarettes as an aid to quit smoking. Only 13.8% of e-smokers tired to give up e-smoking. Almost half of e-smokers (48.8%) tends to give up e-smoking in the nearest future. Reduction in cigarette consumption (mean  $6.5 \pm 5.0$  cigarettes/daily) was observed by 50.8% of dual smokers. Only 4.4% of e-smokers used e-cigarettes without nicotine. Since they started e-smoking, constant concentration of nicotine in e-liquid was indicated by 61.4% of e-smokers, 12.5% increased (mean  $8.7 \pm 5.1$  mg/ml) and 26.1% reduced (mean  $8.2 \pm 3.5$  mg/ml) nicotine content in usually used e-liquid. Among e-smokers, 48.8% reported an addiction to e-cigarettes.

**Conclusion:** Smoking cessation was not the main reason for e-cigarette use among most of e-smokers. Low percent of e-smokers who use a non-nicotine e-liquid and almost half of e-smokers who declared addiction to e-cigarette, suggests that e-cigarette is rather an additional source of nicotine than effective tool in smoking cessation.

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