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“There is an urgent need to develop molecular point-of-care tests for HPV primary screening”

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Experts recently got together at EUROGIN 2025 in Portugal to share perspectives on how evolving HPV screening programmes across Europe are shaping public health strategies; and to discuss the impact of emerging diagnostic technologies and their role in improving global cervical cancer screening efforts. Revealing more details, Dr Elizaveta Padalko (a specialist in clinical virology and infectious disease diagnostics) from University Hospital Ghent, Belgium, interacted with BioSpectrum.

What are the current challenges facing the HPV diagnostics research globally and in Europe?

Currently, a very important global challenge is the estimated lack of the sufficient number of tests suitable for the primary HPV screening. At the first sight it may sound strange as there are many diagnostic tests on the global market but the

majority of the commercially available tests are not clinically validated according to the international criteria for use in primary cervical cancer screening.

Thus, there is a real need for speeding up the clinical validation of the tests. We clearly observe a global trend to introduce or totally switch to HPV primary strategy on national levels for screening for cervical cancer, what is interesting enough is to a certain extend a result of recent global COVID-19 pandemics as many low and middle income countries have then implemented the molecular testing.

This global evolution in the screening strategies requires urgent development of molecular point-of-care tests for HPV primary screening in order to increase screening coverage globally as well decrease lost to follow-up cases by feasibility of the immediate screen and treat approach. These needs are clearly addressed by the World Health Organization (WHO) target product profile.

Specifically for Europe, the current challenge is surely the adoption of the risk-based stratification of the screened population while the vaccinated cohorts are reaching the screening age. I think that this evolution will lead to the in a certain aspect logical step that women vaccinated at prepuberal age will enter screening later than non-vaccinated target population and will also require less screening rounds.

We already see that Italy recommends screening at the age of 30 years old for women vaccinated before the age of 15 years old. This more personalised approach will require existence of solid national vaccination and screening registries and linkage between them what is not currently everywhere the case. Also, the evolution clearly observed in the Scandinavian countries who have adopted HPV genotype-based risk stratification strategies in their national screening algorithms, shows a very exciting trend for the more personalised screening schedules.

What is the current scenario of cervical cancer cases in Europe (particularly Belgium)?

Before talking about current situation in Europe regarding cervical cancer cases, it is important to emphasise that having both, primary in the form of vaccination and secondary in the form of screening, prevention strategies available, no woman should die from cervical cancer, fully preventable disease, anno 2025. WHO and the European Commission within Europe's Beating Cancer Plan, have implemented the goals to vaccinate and screen 90% of target population by 2030, also known as 90/90/2023 goals.

But also, in high income countries in Europe we still see HPV-related cancers and deaths. In Belgium we register >1000 new cases of HPV-related cancer with the majority of them attributable to cervical cancers. Talking about exact numbers, there are annually 639 women who receive cervical cancer diagnosis and 236 women die annually from cervical cancer in Belgium.

Could you please share details of the research projects being led by Ghent University towards developing new diagnostic solutions for HPV detection?

Ghent University in general and Faculty of Medicine and Health Sciences in particular are very keen on addressing the research topics on global Women's Health including amelioration in the HPV diagnostics. With the very typical for our university global vision, we have participated under coordination of the International Centre for Reproductive Health (ICRH) located at our Ghent University Hospital campus in the Horizon 2020 programme "ELEVATE project (EarLy dEtection of cerVical cAncer in hard-to-reach populations of women through portable, personalised and point-of-care HPV Testing)" including collaboration with 9 international partners and the total budget > 3 mln Euro.

This project led us to the setup of the next Horizon 2020 programme "CHILI project (A Community-based HPV screening Implementation in Low-Income countries) started in 2021 for the 5 calender years and the total budget just some short of 3 million Euro. The HPV-related projects led by me include study in the southern Ethiopia on the impacts of sexually transmitted infections on pregnancy outcome and their link with maternal nutritional status: within this study our international multidisciplinary team will for the first time estimate HPV prevalence in this particular population in this geographical region.

Next to the global vision, our Ghent University Hospital is recognised by the Belgian public health authorities as a part of the consortium of the national HPV reference laboratory, me being the contact person for this reference function. As Belgian national HPV reference laboratory we actively participate in the Global HPV LabNet, established in 2025 by WHO and currently composed of 15 national HPV reference laboratories all over the globe. We are currently also starting research line on laboratory diagnostic methods, in particular HPV16 E6 antibody measurements, as promising early marker for HPV-

related oropharyngeal cancers (OPC).

How HPV screening programmes evolving across the globe (particularly Belgium) are shaping public health strategies?

Actually, Belgium is a good example here as we have recently, starting from the 1st of January 2025, introduced HPV primary screening in our national screening programme. The success of any national screening programme is not only in advanced algorithm as such but is highly dependent on the participation coverage of the target population. Participation in the screening programme for cervical cancer is also in Belgium a public health challenge as approximately 40% of the target population do not participate.

To reach these non-attendees the adaptation of the new strategies, including the possibility of self-sampling, has emerged. So, I am truly looking forward not only to see but to actively participate in the introduction of the self-sampling in Belgium later this year as no woman should be left behind within this lifesaving screening programme.

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