

Editorial

Did self-sampling improve the adherence to group B streptococci screening in pregnant women?



More than 25% of pregnant women may have vaginal or rectal colonization of *Streptococcus agalactiae*, known as Group B streptococcus (GBS), which is a leading infectious cause of neonatal morbidity and mortality.^{1–3} However, a recent case series from the Active Bacterial Core surveillance system concluded that optimal implementation of the Centers for Disease Control and Prevention (CDC) guidelines could reduce the rate by 26–59%, with prenatal screening and *intrapartum* prophylaxis being the most common error types.^{4,5} Therefore, the attitudes and practice patterns of obstetricians related to various aspects of screening for GBS colonization, and providing *intrapartum* antibiotics prophylaxis against early-onset neonatal GBS infection could be several of the most important factors associated with further reduction of the GBS disease burden.

The study by Ko et al⁶ in this issue of the *Journal of Chinese Medical Association*, entitled *A questionnaire study on the acceptability of self-sampling versus screening by clinician for Group B streptococcus (GBS)* investigated 327 pregnant women attending an antenatal clinic for GBS screening. The results of their study showed that in excess of 60% of pregnant women preferred screening by a healthcare worker, and only 5.6% preferred self-screening. The reasons were based on their belief that these professionals had some greater extent of knowledge, and thus might provide a more believable GBS screening procedure.⁶ In fact, these respondents were primarily worried about the accuracy of self-screening for GBS.⁶ However, it is interesting to find that if these respondents have the opportunity to get pregnant again, nearly 70% would like to undertake self-screening for GBS screening. Additionally, nearly 60% of these respondents would also recommend to others that they do the GBS self-screening procedures.⁶ Although the results of this study raise certain questions, based on the relative inconsistency of the study population number provided by the authors in their article (the number of participants was different in all tables),⁶ this article is interesting and worthy of further discussion.

Self-sampling may be an excellent strategy to overcome the obstacle of a large scale population screening and/or health-promoting policy. The authors provided this idea for the

purpose of promoting global health and increasing GBS screening in pregnant women, so it is welcome. However, does it really work? Is it really practical? Some arguments need to be raised.

In Taiwan, Papanicolaou (Pap) smear may be one of the most successful screening methods used to fight invasive cervical cancer,^{7,8} and the incidence of invasive cervical cancer has dramatically declined in recent years.⁹ In the past, cervical cancer was the most common cancer associated with the female reproductive organs. Now, however, the incidence of breast cancer and endometrial cancer has increased to such an extent that they surpass that of cervical cancer.¹⁰ The decreased incidence of cervical cancer is partly due to the widespread use of Pap smear. Although the introduction of Pap smear was successful, the frequency of Pap smear screening remains low, with a reported rate of use of the triennial Pap of 35% for women aged 40–69 years in 1997, 56% in 2001 and reaching a plateau of 55% in 2010 and after.¹¹ There are many articles available that focus on the reasons underlying a low frequency rate of Pap smear in Taiwan, and many strategies have been tried to improve the cervical cancer screening rate.^{11,12} Although many possible explanations could explain the causes, one of the likely reasons might be secondary to traditional embarrassment to *expose* female genital organs. One report showed several barriers to cervical cancer screening, including worry, embarrassment, stigma, the lack of female physicians,¹² which all make women hesitate or decline to receive cervical cancer screening. Therefore, the finding from the study by Ko et al⁶ showing the potential value of self-sampling from the female genital tract attracted our attention. To clarify the relationship between self-sampling and the improvement for global health, such as cancer prevention and infectious disease control, we conducted an extensive literature review up to August 7, 2017. We used the term *self-sampling* to search PubMed (<http://www.ncbi.nlm.nih.gov/pubmed>), and a total of 259 published articles were identified. It was interesting to discover that >90% of the articles addressing self-sampling were related to sexual-related diseases, such as cervical cancer screening. Furthermore, nearly all of these articles discussed the value of the human papillomavirus (HPV) test in cervical cancer screening. Since

HPV plays a critical role in the development of cervical cancer, it is believed that the detection of HPV is a good alternative for cervical cancer screening. In addition, some reports highlighted the proposition that HPV self-sampling is easier to perform, less painful, less embarrassing, and less anxiety provoking than the Pap smear. Of substantial importance is the fact that HPV self-sampling might increase cervical cancer screening compliance for women who have never before or not regularly been screened for cervical cancer.¹³ However, this concept may be applicable to western countries, but not appropriate in Taiwan. One recent study in Taiwan showed that the acceptability of self-sampling for HPV test is still low, and only women who had a Pap test and perceived themselves at high risk for cervical cancer are willing to self-sample for HPV.¹⁴ Therefore, it may not be a good strategy to suggest the use of self-sampling of pregnant women for GBS screening, and we do not believe this suggestion would encourage more pregnant women to receive GBS screening.

In addition, as described in our previous comment about GBS screening for pregnant women,¹⁵ in order to improve by sufficient power a decrease in the false negative rate of GBS in pregnant women, every pregnant women at gestational age between 27 and 35 weeks would have to receive both culture and polymerase chain reaction GBS screening methods; the sampling sites would also need to include both anatomic sites (rectum and low vagina). Although some studies consider the similar effectiveness of GBS screening conducted by women themselves or by their physicians,⁶ in a real-world practice, it is hard to believe that pregnant women would prefer to perform these relatively complicated procedures themselves, especially rectal sampling. As shown by a previous study,⁴ many obstetricians did not even perform the rectal and/or vaginal sampling for GBS screening. Instead, these obstetricians used perianal skin in place of the CDC recommended sites. If the adherence to CDC guidelines is so substandard for obstetricians, it is hard to believe that these pregnant women are likely to have a superior adherence to the CDC guidelines than their own medical providers. In conclusion, although the study by Ko et al⁶ is interesting, their suggestion regarding self-administered GBS screening might not be practical. However, we welcome further inquiry to more comprehensively investigate this frequently debated issue.

Conflicts of interest

The authors declare that they have no conflicts of interest related to the subject matter or materials discussed in this article.

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Wen-Ling Lee

Department of Medicine, Cheng-Hsin General Hospital,
Taipei, Taiwan, ROC

Department of Nursing, Oriental Institute of Technology, New
Taipei City, Taiwan, ROC

Department of Nursing, National Yang-Ming University,
Taipei, Taiwan, ROC

Department of Obstetrics and Gynecology,
National Yang-Ming University, Taipei, Taiwan, ROC

Chang-Ching Yeh
Department of Obstetrics and Gynecology,
National Yang-Ming University, Taipei, Taiwan, ROC

*Division of Gynecology, Department of Obstetrics and
Gynecology, Taipei Veterans General Hospital,
Taipei, Taiwan, ROC*

Peng-Hui Wang*

*Department of Obstetrics and Gynecology,
National Yang-Ming University, Taipei, Taiwan, ROC*

*Division of Gynecology, Department of Obstetrics and
Gynecology, Taipei Veterans General Hospital,
Taipei, Taiwan, ROC*

*Department of Medical Research, China Medical University
Hospital, Taichung, Taiwan, ROC*

*Immunology Center, Taipei Veterans General Hospital, Taipei,
Taiwan, ROC*

*Infection and Immunity Research Center, National Yang-Ming
University, Taipei, Taiwan, ROC*

*Corresponding author. Dr. Peng-Hui Wang, Division of
Gynecology, Department of Obstetrics and Gynecology, Taipei
Veterans General Hospital, 201, Section 2 Shih-Pai Road,
Taipei 112, Taiwan, ROC.

E-mail addresses: phwang@vghtpe.gov.tw, pongpong-wang@gmail.com, phwang@ym.edu.tw (P.-H. Wang)