GlaxoSmithKline Submission to Senate Community Affairs References Committee Inquiry into Gynaecological Health in Australia

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CONTENTS

Introduction

As a leader in the development of vaccines GlaxoSmithKline (GSK) has provided the Australian community with numerous vaccines against a wide range of infectious diseases for a number of years. GSK's latest contribution to combating disease is an innovative vaccine designed to provide the best possible protection against cervical cancer.

GSK is committed to partnering with the Australian government and the community to ensure support and funding for the Human Papillomavirus (HPV) vaccine to make the vaccine accessible for all Australian women.

The following documentation provides an overview of the impact of cervical cancer in Australia and how GSK's HPV vaccine will address this significant health burden.

GSK request that the Senate Community Affairs References Committee consider this information during the inquiry into gynaecological health in Australia.

Human Papillomavirus and cervical cancer

Cervical cancer is caused by an infection involving an extremely common and contagious virus known as the human papillomavirus (HPV) [Bosch et al, 2002]. HPV is usually transmitted by sexual contact and does not necessarily require sexual intercourse to be transmitted. It is such a common virus that nearly 50% of women will be infected by HPV at some time in their life [Baseman and Koutsky 2005, Brown et al 2005].

There are more than 100 different types of HPV however only certain strains cause cervical cancer or pre-cancerous lesions [Bosch et al, 2002]. HPV 16 and 18, are considered two of the most common cancer causing forms and are responsible for 70 per cent of all cervical cancer worldwide [Munoz et al, 2004].

HPV infection generally has no symptoms and in most instances the body's immune system takes care of the infection and it will clear up on its own [Baseman and Koutsky, 2005, Viscidi et al, 2004]. It is when the HPV infection is ongoing or it recurs over time that it has the potential to cause cervical cancer [Bosch et al, 2002].

All women continue to be at risk of cervical cancer, both young and old, during their sexually active lives.

Impact of Cervical Cancer and Abnormal Pap Smears

Cervical cancer is the second most common cancer worldwide in women aged 15 and over [Ferlay et al, 2004]. While the disease can affect women as early as their teens, the incidence of cervical cancer is highest in women aged 45-49 [AIHW, 2005].

Each year in Australia, around 750 women are diagnosed with cervical cancer. Cervical cancer accounted for 238 deaths in Australian women in 2003 [AIHW, 2005]. Importantly, around 30,000 Australian women across a wide age range have abnormal pap smear results which could lead to cervical cancer [AIHW, 2005]. In 2003, the Australian National Cervical Screening Program detected nearly 15,000 women (20-69 years old) with abnormal pap smears requiring surgical treatment and a further 18,443 women (20-69 years old) with abnormal pap smears requiring further follow-up and investigation [AIHW, 2005].

Women diagnosed with cervical cancer during their childbearing years are often treated with surgery, chemotherapy and/or radiation therapy. Treatment not only causes emotional and physical distress but can also lead to longer term problems such as the ability to become pregnant [Wenzel et al, 2005].

Investigation and follow-up for abnormal smears has a significant impact on a woman's quality of life and causes increased anxiety, mood disturbance and general distress due to concerns about loss of child-bearing capacity and sexual functioning [Basen-Engquist et al, 2003].

The women may also experience feelings of guilt and/or anger [Orbell 2004, Palmer 1993], as well as concerns about their fertility following treatment [Lauver, 1999]. Many women report reductions in self-esteem and interest in their usual activities [Gath, 1995].

Consequently, there is a clear public health need for a preventive, primary intervention against both cervical cancer and abnormal pap smears by HPV vaccination. Vaccination combined with screening has the potential to give all Australian women the best possible protection against cervical cancer and abnormal pap smears [Goldie et al, 2004].

Cervical Cancer Vaccine

GSK's vaccine for cervical cancer, Cervarix, was submitted to the Therapeutic Goods Administration (TGA) for approval in March 2006. GSK's application for Cervarix has been given a 'fast-track' status by the TGA and it is therefore expected that Cervarix will be launched early in 2007.

Cervarix draws upon the pioneering work of Professor Ian Frazer and other groups around the world, in the development of this vaccine technology

aimed at prevention cervical cancer. Cervarix is the only vaccine that has been developed for all women from the age of 10 - 55 years and will be provided in a 3 dose course (0, 1 and 6 months).

Cervarix has been developed to provide the best possible protection from the two most common cancer causing forms of the HPV 16 and 18 which are responsible for seventy percent (70%) of cervical cancer globally. [Munoz et al, 2004]. Cervarix has been specifically formulated using next generation vaccine technology (adjuvant AS04), to generate a strong and sustained immune response in all women [Giannini, 2005].

Results of Clinical Investigations

Cervarix has been proven to be 100% effective in preventing persistent or ongoing infection caused by HPV 16 and 18, which can lead to the development of cervical cancer [Harper et al, 2004].

In addition, Cervarix reduced the incidence of abnormal pap smears, identified at screening, by at least 40% [Harper et al, 2006] and may result in a substantial reduction of screening related follow-up and its associated costs.

Cervarix is the only vaccine to have shown evidence of additional cervical cancer coverage due to protection against two other cancer-causing HPV type infections (HPV 31 and 45] [Harper et al, 2006]. Due to the protection against these 2 additional strains of HPV, Cervarix could potentially increase protection against cervical cancer from 70% to protecting against 80% of all cervical cancers [Munoz et al, 2004]. This exciting finding is under further investigation.

The vaccine has an acceptable safety profile, and there are no safety concerns to date. As with all new vaccines, surveillance programs will be conducted to monitor the long-term safety and efficacy of the vaccine in the community.

Conclusion

The advent of a HPV vaccine, such as Cervarix, provides a unique opportunity to protect Australian women against up to 70% of cervical cancer. Furthermore, Cervarix has the potential to reduce abnormal pap smear results and therefore the trauma and anxiety women experience when receiving this news.

GSK hopes that the Senate Community Affairs References Committee considers the benefits that the vaccine offers the community during the inquiry into gynaecological health in Australia.

References

AIHW 2005 – Cervical Screening in Australia (2002 – 2003). Cancer Series No 31, AIHW October 2005

Baseman JG and Koutsky LA. The epidemiology of human papillomavirus infections. J Clin Virol. 2005; 32 Suppl 1:S16-24.

Basen-Engquist K, Paskett ED, Buzaglo J, Miller SM, Schover L, Wenzel LB, Bodurka DC. Cervical cancer - Behavioural Factors Related to Screening, Diagnosis and Survivors' Quality of Life. Cancer (Supplement) 2003; 98(9):2009 – 2014.

Bosch FX, Lorincz A, Muñoz N, Meijer CJLM, Shah KV. The causal relation between human papillomavirus and cervical cancer. J Clin Pathol 2002; 55:244-265.

Brown DR, Shew ML, Qadadri B, Neptune N, Vargas M, Tu W, Juliar BE, Breen TE and Fortenberry JD. A longitudinal study of genital human papillomavirus infection in a cohort of closely followed adolescent women. J Infect Dis. 2005; 191:182-92.

Ferlay J, Parkin DM, Bray F, Pisani P. Global Cancer Statistics 2002, published 2004.

Gath DH, Hallam N, Mynors-Wallis L, Day A and Bond SA. Emotional reactions in women attending a UK colposcopy clinic. J Epidemiol Community Health. 1995; 49:79-83

Giannini SL, Fourneau M, Colau B, Suzich J, Losonksy G, Dubin G, Hanon E, Wettendorf M. Evaluation of the Immune Response induced by vaccination with HPV 16/18 VLP formulated with either ASO4 or Aluminium adjuvant. 2005. International Papillomavirus Conference, Vancouver.

Goldie SJ, Kohli M, Grima D, Weinstein MC, Wright TC, Bosch FX and Franco E. Projected clinical benefits and cost-effectiveness of a human papillomavirus 16/18 vaccine. J Natl Cancer Inst. 2004; 96:604-15.

Harper DM, Franco EL, Wheeler C, Ferris DG, Jenkins D, Schuind A, Zahaf T, Innis B, Naud P, De Carvalho NS, Roteli-Martins CM, Teixeira J, Blatter MM, Korn AP, Quint W and Dubin G. Efficacy of a bivalent L1 virus-like particle vaccine in prevention of infection with human papillomavirus types 16 and 18 in young women: a randomised controlled trial. Lancet. 2004; 364:1757-65.

Harper DM, Franco EL, Wheeler C, Moscicki AB, Romanowski B, Rotelli-Martins CM, Jenkins D, Schuind A, Costa Clemens SA, Dubin G, on behalf of the HPV Vaccine Study Group. Sustained Efficacy up to 4.5 years of a bivalent L1 virus – like particle vaccine against human papillomavirus types 16 and 18: follow – up from a randomised control trial. Lancet 2006; 367:1247-1255.

Lauver DR, Baggot A and Kruse K. Women's experiences in coping with abnormal Papanicolaou results and follow-up colposcopy. J Obstet Gynecol Neonatal Nurs. 1999; 28:283-90.

Munoz N, Bosch FX, Castellsague X, Diaz M, de Sanjose S, Hammouda D, Shah KV and Meijer CJ. Against which human papillomavirus types shall we vaccinate and screen? The international perspective. Int J Cancer. 2004; 111:278-85.

Orbell S, Hagger M, Brown V and Tidy J. Appraisal theory and emotional sequelae of first visit to colposcopy following an abnormal cervical screening result. Br J Health Psychol. 2004; 9:533-55.

Palmer AG, Tucker S, Warren R and Adams M. Understanding women's responses to treatment for cervical intra-epithelial neoplasia. Br J Clin Psychol. 1993; 32 (Pt 1):101-12

Viscidi RP, Schiffman M, Hildesheim A, Herrero R, Castle PE et al. Seroreactivity to Human Papillomavirus (HPV) Types 16, 18 or 31 and Risk of Subsequent HPV Infection: Results from a Population-Based Study in Costa Rica. Cancer, Epid Biomarkers and Prevention 2004; 13:324-327.

Viscidi RP, Schiffman M, Hildesheim A, Herrero R, Castle PE, Bratti MC, Rodriguez AC, Sherman ME, Wang S, Clayman B, Burk RD. Seroreactivity to Human Papillomavirus (HPV) types 16, 18, or 31 and Risk of Subsequent HPV Infection: Results from a Population-Based Study in Costa Rica. Cancer Epidemiology, Biomarkers and Prevention.2004; 13: 324-327.

Wenzel W, Dogan-Ates A, Habbal R, Berkowitz R, Goldstein DP, Bernstein M, Kluhsman BC, Osann K, Newlands E, Seckl MJ, Hancock B, Cella D. Defining and Measuring Reproductive Concerns of Female Cancer Survivors. Journal of the National Cancer Institute Monographs, No 34, 2005; 94-98.