Pili genes pattern in Group B streptococci from newborn infections and pregnant women in Europe (DEVANI Project)

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Objectives
Evaluation of the presence and expression of genes coding for pili in a collection of group B streptococccci (GBS) isolated from newborn infection and pregnant women in the course of the DEVANI (Design of a Vaccine Against Neonatal Infection) project.

Methods
GBS isolates from pregnant women (PW) and cases of newborn infection (NI) were collected in 8 European countries (Belgium, Bulgaria, Czech Republic, Denmark, Germany, Italy, Spain, United Kingdom) during 2009/10 under the auspices of DEVANI. Total no. of strains examined was 1078 and 192 from PW and NI, respectively. Isolates were screened by multiplex PCR and FACS analysis to evaluate respectively gene presence and surface-exposure of pili.

Results
The most common gene patterns found were PI-2a alone, PI 1+2a and PI 1+2b, while the PI-2b gene alone was very rare. The most prominent result was that a majority of isolates from NI carried the PI-1+2b gene pattern, while the most common pattern among PW was PI-1+2a. Most of analyzed strains express at least one pilus on their surface.

Conclusions
All isolates contained at least one gene coding for pili. When present pili 2a and 2b were highly surface exposed.