

A case-control study to estimate the effect of acute clinical infection with Schmallenberg virus (SBV) on milk yield, fertility, and veterinary costs in Swiss Dairy herds

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Key words

Schmallenberg virus, dairy herds, acute clinical signs, economic losses, Switzerland

Aim of the study

The aims of this study were to estimate the effects of an acute infection with SBV on animal health, fertility, milk yield and veterinary treatments, and to assess the costs associated with these effects.

Material and methods

Seventy-seven case farms with acute clinical signs of SBV infection between July and December 2012 and 77 matched control farms without clinical signs were visited in 2013 and a questionnaire was filled in. Furthermore, data regarding fertility, milk yield and veterinary treatments were collected and compared both between groups and within groups for the time periods before, during and after SBV infection.

Results and significance

Case farms had more cows and a higher milk yield than control farms, indicating that larger farms might be at higher risk of developing and/or detecting clinical signs of SBV infection. The average abortion rate in case farms was 2.3% between July and December 2012, whereas the stillbirth rate between July 2012 and June 2013 was lower with 1.2%. More than half of the clinically affected cows were treated by a veterinarian and the average treatment costs per case farm were CHF 538. Furthermore, case farms had significantly higher general monthly veterinary costs and a significant higher theoretical bulk milk somatic cell count from July to December 2012, as well as a significantly lower milk yield during this period. According to farmers' estimations, the median loss due to SBV infection in case farms was CHF 5000. From our study results, the standardized theoretical loss (abortions, stillbirths, reduced milk production, treatment costs) due to an acute infection with SBV was CHF 1606, calculated for a farm with an average herd size of 33 cows. Despite the fact that SBV spread rapidly throughout Switzerland and although some affected farmers estimated their loss over CHF 10'000, the present results indicate that the impact of SBV in Swiss dairy herds was in general rather slight on milk production, fertility and veterinary costs.

Publications, posters and presentations

Wüthrich, M.; Lechner I.; Aebi, M.; Vögtlin, A.; Posthaus, H.; Schüpbach-Regula, G.; Meylan, M. (2015) A case-control study to estimate the effect of acute clinical infection with Schmallenberg virus (SBV) on milk yield, fertility, and veterinary costs in Swiss Dairy herds. Manuscript in preparation for submission to Preventive Veterinary Medicine.

Lechner, I.; Wüthrich, M.; Meylan, M.; van den Borne, B.; Schüpbach-Regula, G. (2015) Schmallenberg virus: the impact of clinical signs on milk yield and reproduction parameters in dairy cattle in Switzerland. Manuscript in preparation for submission to Preventive Veterinary Medicine.

Kronenberg, P.; Wüthrich, M.; Schüpbach-Regula, G.; Meylan, M. (2016) Klinische Symptome bei akuter Infektion mit Schmallenbergvirus und Auswirkungen auf die Fruchtbarkeit von Schweizerischen Milchkühen. Masterarbeit Vetsuisse Fakultät Bern und Manuskript zur Publikation im Schweizer Archiv für Tierheilkunde.

Oral presentations at international (3) and national congresses (1), 1 poster at an international congress.

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