

P0214

Paper Poster Session

MRSA - one health worldwide

Characterization of community-acquired CC398 methicillin-resistant *Staphylococcus aureus* cases without pig contact in Denmark, 2014

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Background: Livestock associated methicillin-resistant *Staphylococcus aureus* (MRSA) belonging to the clonal complex 398 (CC398) has increased in Denmark in recent years and in 2014, 43% of all new reported MRSA cases were classified as CC398 MRSA (clinical and non-clinical isolates). In 2012 the Danish national MRSA guidelines were updated, now advising all patients who report contact with live pigs to be screened for MRSA at hospital admission. In 2014, 9% of CC398 MRSA cases reported no contact with live pigs, indicating spread into the community. In this study we describe the epidemiology of community-acquired (CA) CC398 MRSA cases without pig contact compared with other MRSA cases. We hypothesize that these cases have the same age and sex distribution, and the same ratio between clinical and asymptomatic cases as non-CC398 CA-MRSA cases rather than CC398 MRSA cases with pig contact.

Material/methods: MRSA has been notifiable by law in Denmark since 2006 to the national MRSA registry, managed by the Department of Infectious Disease Epidemiology at Statens Serum Institut (SSI). All MRSA cases are given an epidemiological classification based on laboratory typing and notifications from reporting doctors. All MRSA notifications in the registry from 2006-2015 were included in the study. Cases classified as hospital acquired (HA-MRSA) or acquired abroad (AA-MRSA) were excluded.

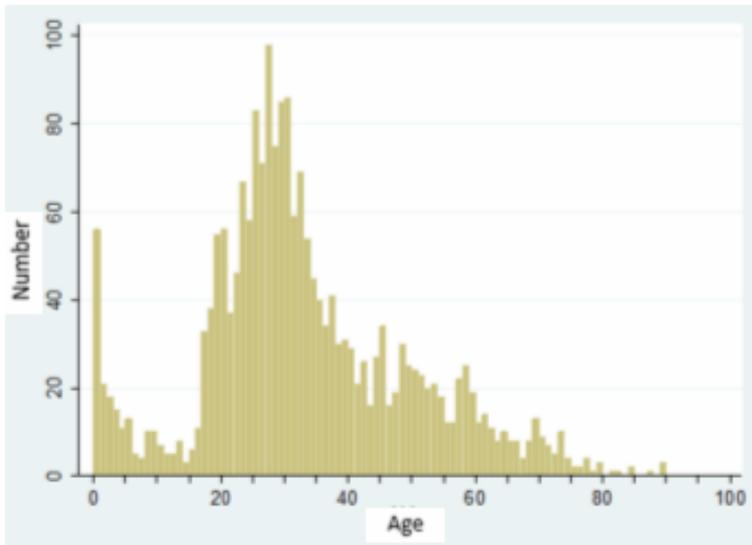
Results: In 2014, 1276 cases of CC398 MRSA were reported to the national MRSA registry, a marked increase from 2013, where only 643 cases were reported. 88% were classified as CC398 MRSA cases with pig contact and 9% were classified as CC398 CA-MRSA cases, reporting no contact with live pigs.

Sex distribution and ratio of clinical and asymptomatic cases was similar for CC398 CA-MRSA cases to those of non-CC398 CA-MRSA cases (Table 1). The age distribution was more diverse, but still resembling that of non-CC398 CA-MRSA cases more than CC398 MRSA cases with contact to pigs (Figure 1). In order to give a better age distribution estimate, we compared cases from all three groups from January 2006 to September 2015.

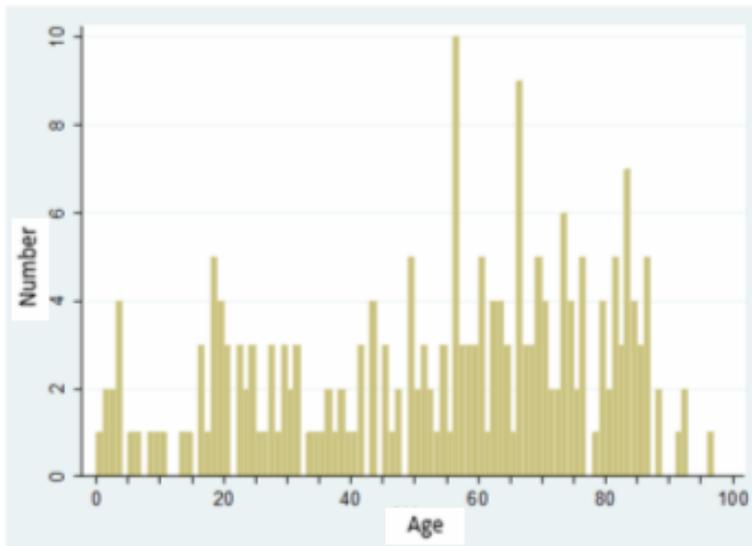
Conclusions: Age and sex distribution and ratio of clinical and asymptomatic cases of CC398 CA-MRSA cases without pig contact resemble that of non-CC398 CA-MRSA cases. The resemblance is a reflection of the usual screening activity in the community. There is a need to discover what risk factors for CC398 MRSA that are present outside the traditional group of people with known pig contact, to get a more detailed knowledge of how CC398 MRSA is spreading in to the community.

Table 1.	Characteristics of MRSA cases in 2014					
	LA-MRSA with pig contact (N=1122)		CC398 CA-MRSA without pig contact (N=110)		Non-CC398 CA-MRSA (N=1157)	
	Male	Female	Male	Female	Male	Female
Gender (%)	692(62%)	430 (38%)	60 (55%)	50 (45%)	578 (50%)	579 (50%)
	Screening by indication					
Clinical infection (%)	115 (17%)	53 (12%)	22 (37%)	23 (46%)	309 (53%)	290 (50%)
Asymptomatic (%)	577 (83%)	377 (88%)	38 (63%)	27 (54%)	269 (47%)	289 (50%)
Total (%)	692 (100%)	430 (100%)	60 (100%)	50 (100%)	578 (100%)	579 (100%)

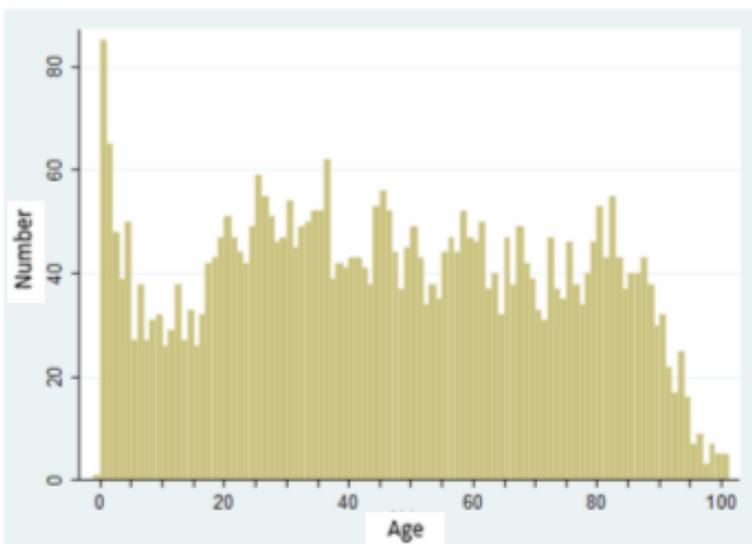
Fig. 1. Age distribution of CC398 MRSA and non-CC398 CA-MRSA cases 2006-2015



CC398 MRSA cases with pig contact 2006-2015 (N=2089)



CC398 CA-MRSA cases without pig contact 2006-2015 (N=216)



Non-CC398 CA-MRSA cases 2006-2015 (N=4025)