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## BACKGROUND

- Healthcare workers are at risk of hepatitis C virus (HCV) infection through percutaneous injuries and contact with infected body fluids.
- In Switzerland, data on HCV seroprevalence in healthcare workers are lacking.
- Following official recommendations, testing is usually limited to personnel with exposure-prone procedures, a history of sharps injury or other HCV risks.
- This seroprevalence survey aims to determine prevalence and predictors of HCV infection among the personnel of a Swiss tertiary care hospital.

## METHODS

- Starting in 2005, all personnel newly employed for >6 months at the Cantonal Hospital St. Gallen had an opt-out HCV ELISA testing (with Abbott HCV EIA) as part of their hospital employment examination.
- Previously employed personnel underwent HCV testing in case of sharps injuries or when consulting the staff doctor's service for other reasons.
- Testing was offered free of charge and irrespective of patient contact (80% with patient contact).
- In individuals with positive HCV ELISA, HCV immunoblot and -PCR were performed as needed.
- False positive screening tests were assumed in persons with negative PCR, neg. or indeterminate immunoblot, a low OD-value in the ELISA (where available) and no history of HCV exposure.
- In the true positive cases, disease activity and the source of infection were investigated, with a special focus on potential risk exposure within the healthcare system.

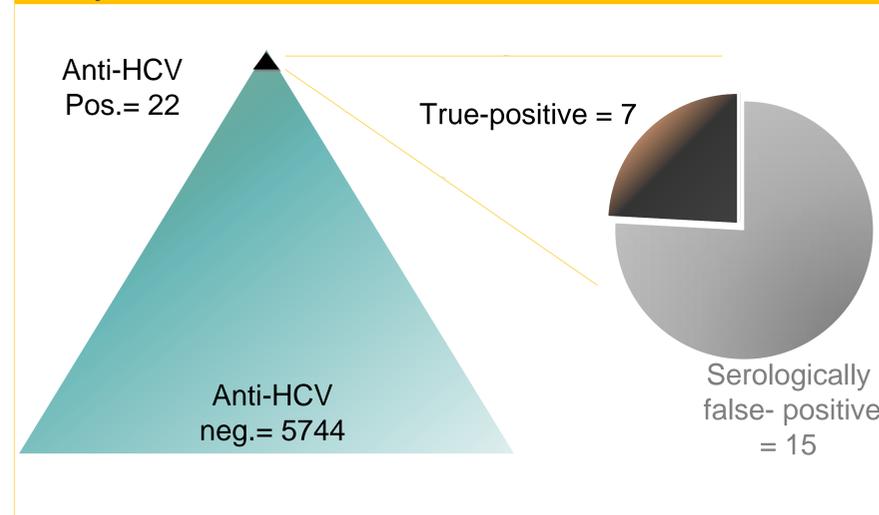
### Literature:

European recommendations for the management of healthcare workers occupationally exposed to hepatitis B virus and hepatitis C virus. Eurosurveillance, Volume 10, Issue 10, 01 October 2005.

## RESULTS

- Data were collected between 2005 and November 2012.
- Including those who left the institution during the investigated time, a total of 8624 hospital personnel were employed for >6 months.
- Among these, 5766 persons (67%) were screened for hepatitis C. 22 (0,4%) persons tested positive for HCV antibody, with a false positivity in 15 patients (68% of total 22) (see Graph 1).
- Details of the seven persons accurately diagnosed as HCV seropositive (0,1% of all persons screened) are shown in Table 1.

Graph 1:



## DISCUSSION

- With a rate of 0,1%, hospital personnel at our institution showed a lower HCV seropositivity than in the general Swiss population, where the expected prevalence is set at 0,7-1% and is strongly associated with injection drug use.
- Our rate of 68% regarded as false positives reflects the problems of testing in a low-risk population.
- The official strategy recommends HCV testing to "persons at risk". However, in all five persons with previously unknown HCV, including three HCW with chronic HCV, an HCV risk had not been apparent.
- In two persons, previous needle stick injuries with at-risk patients were retrospectively remembered and, after exclusion of other risks, regarded as the most likely source of infection. These incidents had not been reported at the time. Given the high rate of underreporting presently and particularly in the past, there is a potential of undiagnosed HCV infections in HCW.
- In Switzerland, there is no official recommendation to screen persons from HCV-(highly) endemic countries. The HCW with this risk factor would have remained undiagnosed unless symptomatic.

Table 1:

Person	New diagnose	Chronic Hep C*	Patient contact	EPP <sup>†</sup>	Sharps injury	Most likely source of infection
1	yes	yes	yes	no	no	Former i.v. drug abuse
2	yes	yes	yes	no	no	Multiple invasive procedures in country of origin (hepatitis C endemic)
3	yes	yes	yes	no	yes	Previous needle stick injury**
4	yes	no	yes	no	Yes	Previous needle stick injury**
5	yes	no	yes	no	no	Unknown (tattoos during 1990s)
6	no	unknown	no	no	no	Transfusion after accident
7	no	unknown	yes	no	no	unknown

\* yes = PCR pos. at time of new diagnose; no = neg. PCR measured 2x at least 6 m apart

\*\* details see text

<sup>†</sup>EPP = exposure prone procedures

## CONCLUSION

- The rate of HCV seropositivity is very low in hospital personnel at our institution.
- Broad screening lead to new HCV diagnosis in five persons, of whom three with chronic infection and treatment indication. None of these three HCV had undergone EPP.
- (Former) HCV risks may be underreported and can influence the detection rate in strategies that rely on self-reporting.
- The advantages of screening have to be set against the high rate of false positive results, with additional tests causing apprehension and costs.
- Although our strategy of broad HCV testing of hospital personnel uncovered a low rate of chronic HCV infection, it might nevertheless be interesting to evaluate it from a cost-effectiveness and public health viewpoint.