

**P1625**

**Poster Session VI**

**Infection control - not only for MDR bacteria**

**RISK OF OCCUPATIONAL HIV, HBV AND HCV TRANSMISSION BASED ON SOURCE PATIENT INFECTIOUSNESS AND EXPOSURE INTENSITY- DATA FROM THREE SWISS HOSPITALS**

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**OBJECTIVES**

Sharps injuries and mucous membrane exposures are frequent in healthcare and associated with transmission of HIV, hepatitis B- (HBV) and hepatitis C virus (HCV). Transmission risk depends on type and intensity of exposure combined with source patient infectiousness. Increasing numbers of affected patients are treated, which avoids or reduces transmission risk. However, reports on occupational exposures at most mention the source patients' serologic status. Information on infectiousness at time of exposure is rare and not correlated with type and intensity of exposure.

**METHODS**

At the Cantonal Hospital St. Gallen and two adjoining hospitals (900 beds, 5600 personnel), all prospectively collected data on sharps and splash injuries from 2007 to 2012 were retrospectively analysed. In source patients with HIV or HCV, infectiousness at time of exposure was evaluated by disease/treatment history and viral load (VL). For HBV, source patient infectivity was only tested in nonimmune exposed persons. Exposure type and intensity were categorized according to body fluid, affected body area and likely amount of percutaneously transmitted fluid.

**RESULTS**

Among 1370 reported incidents, 83% were sharps injuries, 15% mucous membrane- or skin exposures. 73 exposures (5%) occurred with HIV- respectively HCV patients. Table 1 shows the risk evaluation in HCV exposures.

**HCV-positive source patients: evaluation of exposure risk**

|                |   |
|----------------|---|
| Increased risk | Intraoperative sharps/ 14: detectable VL<br>hollow-bore needle injuries: 5: unavailable VL  |
| Reduced risk   | 3: insulin needle resp. shaving razor injuries, detectable VL<br>7: conjunctival blood exposures, detectable VL<br>9: blood on intact skin                |
| No risk        | 9: sharps injuries, undetectable VL<br>3: pricks with no-risk fluids<br>3: no-risk fluids on mucous membranes<br>1: blood on fresh wound, undetectable VL |
| <b>Total</b>   | <b>56</b> (2: insufficient information)   |

HIV-positive patients were involved in 17 incidents, with 12 skin/conjunctival exposures regarded as no risk. In 2 out of 5 sharps exposures, viral load was detectable. HBV immunity was incomplete in 10 exposed persons. Source patient testing was negative in 7 and missing in 3 patients.

**CONCLUSIONS**

With exposure intensity and source patient infectiousness included, 16 out of 73 incidences (22%) in HIV/ HCV patients were regarded as increased risk (21 if missing data are considered as risky situation). Nevertheless, this low risk estimate should not result in a reduction of post-exposure evaluations: early intervention can prevent HIV and HBV infection, and early HCV detection results in better treatment outcome.

Considerably more exposures were reported in source patients with HCV than HIV. This likely reflects the disease rate in Switzerland (HCV: 0,7-1%, HIV 0,3%). Underreporting in exposures 'self-evaluated' as no risk might explain the higher rate of reported skin/mucous membrane exposures in HIV/HCV patients (43% versus 15% overall). The high rate of HBV protection in personnel reduced the number of HBV tests in source patients.

