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SHARPS INJURY RISKS IN NURSING HOMES

Background

The everyday activities of workers in nursing homes put them at risk of serious infections with more than 30 potentially dangerous pathogens, including Hepatitis B (HBV), hepatitis C (HCV) and Human Immunodeficiency Virus (HIV), through injuries with contaminated needles and lancets. More than one million needle stick injuries (NSI) are estimated to occur in the EU each year (EU Commission for Employment, 2010), many of them in the nursing home setting.

Nursing Homes and Accidental Sticks

A recent publication from the Netherlands (Vos D, Gotz HM, Richardus JH, 2006), on NSI outside the hospital setting shows that 84% of the NSIs in nursing assistants involved an insulin needle or pen. Worryingly, thirty-five percent of all healthcare workers and 47% of the nursing assistants were not vaccinated against Hepatitis B. In a similar study in Belgium (Kiss P, De Meester M, Braeckman L., 2008), 45 nursing homes were surveyed from the East Flanders region. A total of 162 NSI were reported. Cleaning, technical, or kitchen personnel were involved in 13% of all NSI; registered nurses were involved in 56%, and 28% involved geriatrics helpers. The three sharp devices most frequently involved in NSI were insulin pens (40% of injuries), needles for subcutaneous injection (21%), and lancet needles (20%). All three of these devices are used in the care of patients with diabetes. Therefore, in nursing homes, diabetes treatment is a major source of NSI and should receive priority attention in the development of preventive strategies.

Diabetic Patients and Deadly Viruses

According to one study (Demir M, Serin E, Göktürk S et al. Jul. 2008), HBV DNA was discovered in 11% of type 2 patients with diabetes, compared to 3% of the control sample. The CDC has recently recommended mandatory HBV vaccination for patients with diabetes and has warned that many of them may have been infected in places where they undergo assisted blood glucose monitoring, with more than one person using the monitor (Poll-Hepatitis B Vaccine Recommended for Adults and Vaccinnes). A worrying proportion of European nurses treating people with diabetes have not had HBV vaccination (De Schryver A, Claesen B, Meheus A et al. Sep. 2010).. The prevalence of HCV (Simó R, Hernández C, Genescà J et al., Sep. 1996) among people with diabetes is also higher than in the general population and the prevalence of HIV (Mondy K, Overton ET, Grubb J et al., Mar. 2007) is approximately equal. For these viruses no vaccination currently exists.

Diabetic Needles and Blood

Furthermore, diabetes needles themselves have been shown to retain traces of blood. It takes very small quantities of blood to transmit HBV or HCV and minute, even invisible, amounts of blood are present on used insulin needles. This can add up to approximately 10,000 virus particles per μL , a number sufficient to infect many people with HBV. The load for HCV is lower, but is still enough to infect multiple victims. If we move from risk to actual conversions, the story is still worrying; there are studies showing HCV conversions are between one and two for every hundred NSI percutaneous exposures with contaminated sharps (UK Occupational Bloodborne Virus Report, November 2008). For HBV this may be as common as one for every three exposures in unvaccinated victims (Denes AE, Smith JL, Maynard JE et al., 1978).

EU Directive

In June 2010, the EU Council published Directive 2010/32/EU on the prevention of sharps injuries in settings like nursing homes. It requires that all at-risk injections or bloodletting with lancets must be done with safety-engineered devices (Council Directive 2010/32/EU). The Directive must be implemented in all nursing homes in all EU member states by 11 May 2013, at the latest.

WISE Conclusions

The Workshop on Injection Safety in Endocrinology (WISE), sponsored by the European Medical Association, brought together 57 leaders from 13 countries to discuss the application of the new EU Directive to diabetes care. Specific WISE recommendations for safe injections in diabetes have just been published by a leading medical journal, *Diabetes & Metabolism* (Strauss K, WISE Consensus Group, Jan 2012). These recommendations state that all injections or fingersticks for managing diabetes in nursing homes must be done with safety-engineered devices.

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