

Promoting Vaccination of Vaccine Preventable Diseases in Newly Employed Nurses and Doctors Guided by Serological Study

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Backgrounds

Vaccination after serological evaluation of healthcare workers is key component of vaccine preventable diseases (VPDs) preparedness in hospital. The aim of this study is to determine the seroprevalence of VPDs and the vaccination rates among newly employed nurses and doctors.

Methods

A cross-sectional study was conducted at a referral university hospital in the Republic of Korea. All newly employed nurses and doctors without immunity were recommended to have the hepatitis B virus (HBV), varicella zoster virus (VZV), measles, mumps, and rubella (MMR), hepatitis A virus (HAV) and tetanus-diphtheria-pertussis (Tdap) vaccination. HBV, VZV, MMR vaccinations were financially supported and Tdap vaccination was recommended without testing. We investigated the seroprevalence of HAV, HBV, and VZV and vaccination rate of recommended vaccination (HAV, HBV, MMR, VZV, and Tdap) from Jan 1st, 2017 to March 31th, 2020.

	Doctors (N = 221)	Nurses (N = 447)
Age (mean±SD)	26.5 ± 2.5	25.4 ± 2.2
Male	126	15
Female	95	432

	HAV	HBV	VZV	MMR	Tdap
Seroprevalence (%)	59.1	86.1	92.4		
(95% CI)	55.4-	83.5-	90.4-		
(N = 668)	62.8 (668)	88.7 (668)	94.4 (668)		
Vaccination rate (%)	24.5	23.3	48.7	30.0	33.1
(95% CI)	18.5-	13.6-	33.0-	25.5-	29.0-
(N)	30.5 (196)	33.0 (73)	64.4 (39)	34.5 (404)	37.2 (496)

Result

A total of 668 (527 female, 141 male) newly employed nurses and doctors were identified. The median age (IQR) is 25 (24-27).

Seroprevalence were 59.1% (95% confidence interval [CI] 55.4-62.8) for HAV, 86.1% (95% CI 83.5-88.7) for HBV, and 92.4% (95% CI 90.4-94.4) for VZV. Vaccination rate of recommended vaccination were 24.5% (95% CI 18.5-30.5) for HAV, 23.3% (95% CI 13.6-33.0) for HBV, 48.7% (95% CI 33.0-64.4) for VZV, 30.0% (95% CI 25.5-34.5) for MMR and 33.1% (95% CI 29.0-37.2) for Tdap respectively.

Conclusion

Seroprevalence of HAV was lower than HBV and varicella in newly employed nurses and doctors. Although persistent effort to improve the healthcare worker's vaccination, the actual rates were low. Further strategy promoting vaccination of newly employed nurses and doctors are needed.