

## Respon Imun terhadap Vaksin Influenza pada Remaja

### *Adolescent Immune Response to Influenza Vaccine*

Meita Dhamayanti, Kusnandi Rusmil, Ponpon Idjradinata

Departemen Ilmu Kesehatan Anak Fakultas Kedokteran Universitas Padjadjaran/Rumah Sakit Dr. Hasan Sadikin Bandung

#### ABSTRAK

Influenza merupakan penyakit yang mudah menular dengan mortalitas dan morbiditas tinggi serta sering menimbulkan kejadian luar biasa, epidemi, dan pandemi. Pada anak sekolah, influenza menyebabkan tingginya angka absensi dan remaja merupakan sumber penularan terbesar. Penelitian dilakukan untuk menilai respons imun terhadap vaksin influenza pada kelompok remaja 12–18 tahun pada bulan Juni–September 2008, di Puskesmas Garuda Bandung. Desain dilakukan dengan intervensional, longitudinal, acak sederhana, dan tersamar tunggal. Vaksin influenza yang mengandung 3 jenis virus A/H1N1, A/H3N2 dan B, disuntikkan intramuskular. Pengambilan darah dilakukan pra dan *pasca* vaksinasi. Pemeriksaan kadar antibodi dilakukan dengan metode hemaglutinasi inhibisi (HI). Respons imun dinilai berdasarkan nilai serokonversi, dan peningkatan *geometric mean titer* (GMT). Subjek dibagi 2 kelompok, 69 (52,7%) remaja pertengahan (12–15 tahun) dan 62 (47,3%) remaja akhir (16–18 tahun). Semua subjek telah mempunyai kadar antibodi protektif  $HI \geq 1:40$  pascavaksinasi. Nilai serokonversi kedua kelompok berbeda bermakna pada pra ( $p=0,02$ ) dan pascavaksinasi ( $p=0,02$ ). Serokonversi terhadap virus A/H3N2 antara remaja pertengahan dan akhir berbeda bermakna pada pascavaksinasi ( $p=0,02$ ). Pada pra dan pascavaksinasi terdapat peningkatan GMT bermakna terhadap ketiga jenis virus influenza (Zw 9,73; 9,19; 9,59 dan  $p=0,00$ ). Simpulan, vaksinasi influenza pada remaja menghasilkan kadar protektif. Respons imun remaja pertengahan dan akhir tidak berbeda, namun remaja pertengahan tampak lebih responsif.

**Kata Kunci:** Influenza, remaja, respons imun, vaksin

#### ABSTRACT

*As a contagious disease, influenza can cause seasonal outbreaks, epidemics and pandemics resulting high mortality and morbidity. Adolescents are the major source of transmission, resulting in high rates of absenteeism in school-age children. The aim of this study was to assess the immuneresponse of adolescent toward influenza vaccine. The interventional, longitudinal, simple randomized, single blind study was conducted to 12–18 years old adolescents, in Garuda Public Health Center Bandung, on June to September 2008. Influenza vaccine consists of 3 virus type A/H1N1, A/H3N2 and B was injected intramuscularly. Blood samples was taken pre and post vaccination. Antibody titer was measured using hemagglutination-inhibition assays. The immune response was determined based on the seroconversion rate and increase in geometric mean titer (GMT). The subjects were divided into two age groups, 69 (52,7%) middle (12–15 years) and 62 (47,3%) late adolescents (16–18 years). All of the subjects had post vaccination antibody titers  $HI \geq 1:40$ . The seroconversion rate between groups were significantly different ( $p=0,02$  and  $p=0,02$ ). The seroconversion to A/H3N2 between groups were significantly different in pre-vaccination ( $p=0,02$ ). Significant difference was found between GMT for three types of influenza virus (Zw 9.73, 9.19, 9.59 and  $p=0,00$ ). In conclusion, vaccination for influenza in adolescent resulted in protective level. Although there is no difference between the middle and late adolescent, middle adolescents seems more responsive to influenza vaccine.*

**Keywords:** Adolescent, immune response, influenza, vaccine

---

*Jurnal Kedokteran Brawijaya, Vol. 27, No. 2, Agustus 2012; Korespondensi: Meita Dhamayanti. Departemen Ilmu Kesehatan Anak Fakultas Kedokteran Universitas Padjadjaran Bandung, Jl. Dipati Ukur No. 35 Bandung Tel. (022) 2503271 Email: meita\_d@yahoo.com*