

## Kadar antibodi campak pada anak usia 1-4 tahun pasca imunisasi campak = Measles antibody level in children 1-4 years old after measles immunization

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### Abstrak

Latar belakang. Cakupan imunisasi campak di Indonesia mencapai 80% namun prevalens campak di Indonesia masih tinggi, terutama pada anak usia 1-4 tahun. WHO merekomendasikan pemberian imunisasi campak ke-2 pada tahun kedua kehidupan. Di Indonesia diberikan pada usia 15-18 bulan dalam kombinasi vaksin MMR. Sayangnya cakupan imunisasi MMR masih rendah sehingga Depkes merekomendasikan pemberian imunisasi campak ke-2 pada usia 2 tahun untuk meningkatkan imunitas seorang anak terhadap penyakit campak.

Tujuan. Penelitian ini untuk mengetahui: (1) proporsi anak usia 1-4 tahun yang telah mendapatkan imunisasi campak 1 kali yang memiliki antibodi campak mencapai kadar protektif dan rerata kadar antibodinya, (2) proporsi anak usia 1-4 tahun yang telah mendapatkan imunisasi campak 2 kali yang memiliki antibodi campak mencapai kadar protektif dan rerata kadar antibodinya, (3) hubungan antara usia saat diperiksa kadar antibodi campak, usia saat imunisasi, status gizi, kondisi kesehatan saat imunisasi campak terhadap antibodi campak, (4) hubungan antara pemberian imunisasi campak dosis ke-dua terhadap antibodi campak.

Metode. Penelitian potong lintang di 6 posyandu di 5 wilayah DKI Jakarta pada bulan Juni hingga Agustus 2014. Anak yang memenuhi kriteria inklusi diperiksa kadar IgG campak. Dari hasil pemeriksaan IgG campak, kemudian ditentukan apakah mencapai kadar protektif atau tidak dan rerata kadar antibodinya.

Dicari apakah terdapat hubungan antara imunisasi campak dosis ke-dua dengan kadar antibodi campak.

Hasil. Dari 145 subjek penelitian, 125 subjek (86,2%) memiliki kadar antibodi campak yang mencapai kadar protektif (  $\geq 120$  mIU/ml) dan 20 subjek (13,8%) memiliki kadar antibodi campak yang tidak mencapai kadar protektif ( $< 120$  mIU/ml). Median kadar antibodi campak pada kelompok protektif adalah 844 mIU/ml, dengan nilai minimum 129 mIU/ml dan nilai maksimum 5000 mIU/ml. Kelompok usia 3-4 tahun memiliki kadar antibodi campak yang mencapai kadar protektif terbanyak (91,8%) dibanding kelompok usia 2-3 tahun (88,2%) dan 1-2 tahun (72,7%). Tidak didapatkan hubungan antara usia saat mendapatkan imunisasi campak dan status gizi terhadap kadar antibodi campak.

Simpulan. (1) Proporsi anak usia 1-4 tahun yang mendapatkan imunisasi campak 1 kali dan memiliki antibodi campak mencapai kadar protektif sebesar 77% (54/70) dengan median kadar antibodinya adalah 733,5 mIU/ml, (2) Proporsi anak usia 1-4 tahun yang mendapatkan imunisasi campak 2 kali dan memiliki antibodi campak mencapai kadar protektif sebesar 94,6% (71/75) dengan median kadar antibodinya adalah 885 mIU/ml. (3) Pemberian imunisasi campak 2 kali meningkatkan timbulnya antibodi campak yang mencapai kadar protektif sebesar 1,227 kali dibanding pemberian imunisasi campak 1 kali.

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Background. Indonesia measles immunization coverage reach 80% but measles prevalence remains high especially in children 1-4 years old. WHO recommended second dose of measles containing vaccine at second year of age. In Indonesia, it has been done through MMR vaccine at 15-18 month. Unfortunately MMR immunization coverage still low and Ministry of Health recommended second dose of measles

containing vaccine for all 2 years old children who have never been immunized with MMR vaccine at 15-18 month to increase the immunity against measles.

Objectives. This study aimed to know: (1) proportion of children 1-4 years old who has been immunized one time measles vaccine and reach protective antibody level and mean of antibody, (2) proportion of children 1-4 years old who has been immunized twice or more measles vaccine and reach protective antibody level and mean of antibody, (3) association between age, age of immunization, nutritional status, and health status when being immunized with measles antibody level, (4) association between second dose of measles vaccine with measles antibody level.

Methods. Cross-sectional study performed in 6 posyandu in 5 region of Jakarta since June until August 2014. Children who met the inclusion criteria were checked for measles IgG, identified for reaching protective level and mean of antibody. Association between second dose of measles vaccine with measles antibody level was also measured.

Results. From 145 participants, 125 (86,2%) had protective measles antibody level ( $\geq 120$  mIU/ml) and 20 (13,8%) had not reached protective level ( $< 120$  mIU/ml). The median measles antibody level in protective group was 844 mIU/ml, with minimum point was 129 mIU/ml and maximum point was 5000 mIU/ml. Children in 3-4 years old group had highest percentage of protective measles antibody level (91,8%) compare to children in 2-3 years old group (88,2%) and 1-2 years old group (72,7%). There were no association between age of immunization and nutritional status with measles antibody level.

Conclusion. (1) Proportion of children 1-4 years old who has been immunized one time measles immunization and reach protective measles antibody level was 77% (54/70) with the median of measles antibody level was 733,5 mIU/ml, (2) Proportion of children 1-4 years old who has been immunized twice or more measles immunization and reach protective measles antibody level was 94,6% (71/75) with the median of measles antibody level was 885 mIU/ml, (3) Twice or more measles immunization will increase protective level of measles antibody 1,227 times compare to one time measles immunization.