

# Perubahan kadar Vitamin D pada anak dengan penyakit jantung bawaan sebelum dan sesudah operasi koreksi dengan mesin pintas jantung paru = Changed Vitamin D Level in Children With Congenital Heart Disease Before and After Cardiac Operation Correction With Cardio Pulmonary Bypass Machine.

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## Abstrak

Latar belakang : Pasien penyakit jantung bawaan memiliki risiko untuk mengalami kehilangan berbagai macam mikronutrien sesudah operasi koreksi dengan mesin pintas jantung paru, salah satunya adalah vitamin D. Defisiensi vitamin D dapat memperberat komplikasi yang terjadi sesudah operasi koreksi dengan mesin pintas jantung paru.

Penelitian ini bertujuan untuk menilai efek dari mesin pintas jantung paru terhadap kadar vitamin D sesudah operasi koreksi penyakit jantung bawaan.

Metode : Penelitian dilakukan secara kohort prospektif dari bulan Maret-Juli 2020.

Pada penelitian ini didapatkan total 30 pasien yang menjalani operasi koreksi dengan mesin pintas jantung paru. Pemeriksaan kadar vitamin D dilakukan sebelum operasi dan 24 jam sesudah mesin pintas jantung paru dimatikan.

Hasil : Rerata kadar vitamin D preoperasi adalah 27,24 ng/mL dengan yang mengalami insufisiensi dan defisiensi sebanyak 70%. Rerata kadar vitamin D sesudah operasi adalah 20,73 ng/mL dengan jumlah subjek yang mengalami insufisiensi dan defisiensi meningkat sebanyak 90%. Setelah operasi, terdapat penurunan vitamin D sebanyak 6,52 ng/mL (24% dari kadar sebelum operasi). Uji korelasi antara penurunan kadar vitamin D dengan penggunaan mesin PJP menunjukkan hasil yang signifikan dengan nilai  $P < 0,001$ . Sedangkan tidak ditemukan hubungan yang signifikan antara durasi penggunaan mesin pintas jantung paru dan durasi aortic cross clamp dengan penurunan kadar vitamin D.

Kesimpulan : Terdapat hubungan yang bermakna antara penggunaan mesin pintas jantung paru dengan penurunan kadar vitamin D, namun penurunan ini tidak dipengaruhi oleh durasi penggunaan mesin pintas jantung paru dan durasi aortic cross clamp.

.....Background: Patients with congenital heart disease are at risk of losing various micronutrients after corrective surgery with a cardio-pulmonary bypass machine, one of which is vitamin D. Vitamin D deficiency can exacerbate complications that occur after corrective surgery with a cardio-pulmonary bypass machine. This study aimed to assess the effect of the cardio-pulmonary bypass machine on vitamin D levels after corrective surgery for congenital heart disease.

Methods: This study was conducted in a prospective cohort from March to July 2020.

In this study, a total of 30 patients underwent corrective surgery with cardio-pulmonary bypass machine. Vitamin D level checks were carried out before surgery and 24 hours

after the machine was turned off.

Results: The mean preoperative vitamin D level was 27.24 ng / mL with insufficiency and deficiency as much as 70%. The mean postoperative vitamin D level was 20.73 ng/mL with the number of subjects experiencing insufficiency and deficiency increasing by 90%. After surgery, there was a decrease in vitamin D by 6.52 mg / mL (24% of the preoperative level). The correlation test between decreased levels of vitamin D and the use of cardio-pulmonary bypass machines showed significant results with a P-value <0.001. Meanwhile, there was no significant relationship between the duration of using the cardio-pulmonary bypass machine and the duration of aortic cross clamp with a decrease in vitamin D

Conclusion: There is a significant relationship between the use of cardio-pulmonary bypass machines and a decrease in vitamin D levels, but this decrease was not influenced by the duration of using the cardio-pulmonary bypass machine and the duration of the aortic cross clamp.