

INTISARI

Latar Belakang: Penelitian sebelumnya di RSUP Prof. Dr. R. D. Kandou Manado menunjukkan bayi yang dirawat di NICU memiliki berat lahir yang rendah. Bayi berat lahir rendah (BBLR) berisiko mengalami kegagalan pertumbuhan. Pemberian nutrisi parenteral bertujuan agar BBLR mencapai kecepatan pertumbuhan yang optimal. Durasi pemberian dapat memengaruhi luaran klinis bayi. Penelitian ini bertujuan untuk mengetahui gambaran *growth velocity* BBLR dan menganalisis hubungan antara durasi pemberian nutrisi parenteral dengan *growth velocity* BBLR.

Metode Penelitian: Penelitian ini merupakan penelitian observasional dengan desain *cross sectional*. Sampel penelitian adalah bayi dengan berat lahir <2500 gram yang diberikan nutrisi parenteral di NICU periode Januari-Desember 2022 dan Agustus-Desember 2023. *Growth velocity* dinilai menggunakan parameter *gain weight velocity* dan perubahan skor-z berat badan/usia. Analisis data menggunakan analisis univariat, bivariat, dan multivariat.

Hasil Penelitian: Median *gain weight velocity* BBLR setelah pemberian nutrisi parenteral sebesar 5,83 g/kg/hari dan belum mencapai target 15-20 g/kg/hari. Median perubahan skor-z BB/U BBLR sebesar -0,65 SD yang menunjukkan terjadi penurunan pertumbuhan. *Growth velocity* yang belum mencapai target dapat disebabkan karena sebagian besar (67,9%) BBLR tidak diberikan emulsi lipid, waktu inisiasi emulsi lipid lebih dari 24 jam dan multivitamin belum dimasukkan dalam nutrisi parenteral. Durasi nutrisi parenteral tidak memiliki korelasi signifikan terhadap *gain weight velocity* dan perubahan skor-z BB/U.

Kesimpulan: *Gain weight velocity* BBLR setelah pemberian nutrisi parenteral sebesar 5,83 g/kg/hari dan belum mencapai target 15-20 g/kg/hari. Median perubahan skor-z BB/U sebesar -0,65 SD menunjukkan terjadi penurunan pertumbuhan setelah pemberian nutrisi parenteral. Tidak terdapat hubungan signifikan antara durasi nutrisi parenteral dengan *gain weight velocity* ($r_s = -0,087$, $p = 0,384$) dan perubahan skor-z BB/U ($r_s = -0,135$, $p = 0,174$). Pemberian emulsi lipid dalam 24 jam pertama dan penambahan multivitamin dalam nutrisi parenteral disarankan untuk meningkatkan *growth velocity* pada BBLR.

Kata kunci : Bayi berat lahir rendah, durasi, nutrisi parenteral, *growth velocity*.

ABSTRACT

Background: Previous research in Kandou Hospital indicated neonates admitted in NICU had low birth weight. Low birth weight (LBW) neonates had higher risks for postnatal growth failure. Parenteral nutrition implementation aimed to ensure LBW neonates have optimal growth velocity. Parenteral nutrition duration can affect clinical outcome in LBW neonates. This study aimed to identify growth velocity after parenteral nutrition administration and analyze relationship between parenteral nutrition duration and growth velocity in LBW infants.

Method: This study was conducted with cross-sectional observational study design. Data were collected from infants with birth weight $<2,500$ grams admitted in NICU from period January-December 2022 and August-December 2023 whom receiving parenteral nutrition. Growth velocity was assessed using gain weight velocity and change in weight for age z-score (WAZ). Data was analyzed using univariate, bivariate, and multivariate analysis.

Result: Gain weight velocity median in LBW neonates was $5,93$ g/kg/day and did not achieve target $15-20$ g/kg/day. Change in WAZ was $-0,65$ SD, indicated decline in growth. Majority of the LBW (67.9%) infants did not receive lipid emulsion; the initiation time of lipid emulsion was later than 24 hours; and multivitamins were not included in parenteral nutrition components, which can be a cause of the low growth velocity. Parenteral nutrition duration had no significant correlation with gain weight velocity and change in WAZ.

Conclusion: Gain weight velocity in LBW after parenteral nutrition was $5,83$ g/kg/day and did not achieve recommendation target. Change in WAZ was $-0,65$ SD indicated decline in growth after parenteral nutrition administration. Parenteral nutrition duration had no significant correlation with gain weight velocity ($r_s = -0,087$, $p = 0,384$) and with change in WAZ ($r_s = -0,135$, $p = 0,174$). We suggest add lipid emulsion and multivitamins in parenteral nutrition from the first 24 hours to improve LBW growth velocity.

Keywords: Low birth weight infant, duration, parenteral nutrition, growth velocity