

DAFTAR PUSTAKA

- Ardissino, G., Dacco, V., Testa, S., Bonaudo, R., Claris-Appiani, A., Taioli, E., Marra, G., Edefonti, A., Sereni, F., 2003. Epidemiology of Chronic Renal Failure in Children: Data From the ItalKid Project. *Pediatrics* 111: 382–7.
- Bacchetta, J., Dubourg, L., Ranchin, B., Abou-jaoude, P., Arnaud, S., Carlier, M., Richard, M., Cochat, P., 2018. The Influence of Glomerular Filtration Rate and Age on Fibroblast Growth Factor 23 Serum Levels in Pediatric Chronic Kidney Disease. *J Clin Endocrinol Metab* 95: 1741–1748.
- Baroncini, L.A.V., Sylvestre, L.C., Pocoits-Filho, R.F., 2015. Assessment of intima–media thickness in healthy children aged 1 to 15 years old. *BBA Clin.* 3: 1–12.
- Belay B, Belamarich P, R.A., 2004. Pediatric precursors of adult atherosclerosis. *Pediatr Rev.* 25: 4–16.
- Braithwaite, V., Bruggraber, S.F.A., Prentice, A., 2013. Intact fibroblast growth factor 23 and fragments in plasma from Gambian children. *Osteoporos. Int.* 24: 1121–1124.
- Chade, A.R., Lerman, A., Lerman, L.O., 2005. Kidney in Early Atherosclerosis. *Hypertension* 45: 1042–1049.
- Charakida, M., Masi, S., Lüscher, T.F., Kastelein, J.J.P., Deanfield, J.E., 2010. Assessment of atherosclerosis: The role of flow-mediated dilatation. *Eur. Heart J.* 31: 2854–2861.
- Coll, B., Betriu, Á., Martínez-Alonso, M., Borrs, M., Craver, L., Amoedo, M.L., Marco, M., Sarró, F., Junyent, M., Valdivielso, J.M., Fernández, E., 2010. Cardiovascular risk factors underestimate atherosclerotic burden in chronic kidney disease: Usefulness of non-invasive tests in cardiovascular assessment. *Nephrol. Dial. Transplant.* 25: 3017–3025.
- Cui, S; Vaingakar, S., 2017. Stability of Fibroblast Growth Factor 23 in Human Plasma. *J Am Soc Nephrol* 23: 729–734.
- Doyon, A., Kracht, D., Bayazit, A.K., Deveci, M., Duzova, A., Krmar, R.T., Litwin, M., Niemirska, A., Oguz, B., Schmidt, B.M.W., Sözeri, B., Querfeld, U., Melk, A., Schaefer, F., Wühl, E., Consortium, S., 2013. Carotid Artery Intima-Media Thickness and Distensibility in Children and Adolescents Reference Values and Role of Body Dimensions. *Hypertension* 62: 550–6.
- Drüeke, T.B., Massy, Z.A., 2010. Atherosclerosis in CKD: Differences from the general population. *Nat. Rev. Nephrol.* 6: 723–735.
- Epure, A.M., Leyvraz, M., Mivelaz, Y., Bernardo, S. Di, Costa, B.R., Chiolero, A., Sekarski, N., 2018. Risk factors and determinants of carotid intima-media thickness in children : protocol for a systematic review and meta-analysis. *BMJ Open* 0: 1–6.



Erben, R.G., Andrukova, O., 2017. FGF23-Klotho signaling axis in the kidney. *Bone*.3:1-10

Erkoçoğlu, M., Özön, Z.A., Göçmen, R., Alikaşifoğlu, A., Gönç, N., 2013. Carotid intima media thickness in adolescents with increased risk for atherosclerosis. *Turk. J. Pediatr.* 55: 510–518.

Figurek, A., Spasovski, G., Popovic-Pejicic, S., 2018. FGF23 Level and Intima-Media Thickness Are Elevated From Early Stages of Chronic Kidney Disease. *Ther. Apher. Dial.* 22: 40–48.

Fiza, B., Prakash, J., Godara, S., Sinha, M., 2017. Association of Parathyroid Hormone with Markers of Bone-Mineral Metabolism in Patients of Chronic Kidney Disease with Secondary Hyperparathyroidism. *Int J Med Res Prof* 3: 4–9.

Fliser, D., Kollerits, B., Neyer, U., Ankerst, D.P., Lhotta, K., Lingenhel, A., Ritz, E., Kronenberg, F., Study, M., 2007. Fibroblast Growth Factor 23 (FGF23) Predicts Progression of Chronic Kidney Disease : The Mild to Moderate Kidney Disease (MMKD) Study. *J Am Soc Nephrol* 18: 2601–2608.

Garcia-Bello, J.A., Gómez-Díaz, R.A., Contreras-Rodríguez, A., Talavera, J.O., Mondragón-González, R., Sanchez-Barbosa, L., Diaz-Flores, M., Valladares-Salgado, A., Gallardo, J.M., Aguilar-Kitsu, A., Lagunas-Munoz, J., Wacher, N.H., 2014. Carotid intima media thickness, oxidative stress, and inflammation in children with chronic kidney disease. *Pediatr. Nephrol.* 29: 273–281.

Gheissari, A., Sirous, M., Hajzargarbashi, T., Kelishadi, R., Merrikhi, A., Azhir, A., 2010. Carotid intima-media thickness in children with end-stage renal disease on dialysis. *Indian J Nephrol* 20: 29–34.

Goldstein, S.L., Currier, H., Watters, L., Hempe, J.M., Sheth, R.D., Silverstein, D., 2003. Acute and chronic inflammation in pediatric patients receiving hemodialysis. *J. Pediatr.* 143: 653–657.

Groothoff, J.W., Lilien, M.R., van de Kar, N.C.J., Wolff, E.D., Davin, J.C., 2005. Cardiovascular disease as a late complication of end-stage renal disease in children. *Pediatr. Nephrol.* 22:23-34

Gutiérrez, O.M., Januzzi, J.L., Isakova, T., Laliberte, K., Smith, K., Collerone, G., Sarwar, A., Hoffmann, U., Coglianese, E., Christenson, R., Wang, T.J., Wolf, M., 2009. Fibroblast Growth Factor 23 and Left Ventricular Hypertrophy in Chronic Kidney Disease. *Circulation* 119: 2545–2552.

Hao, L., Chang, X., Fu, Y., He, Z., 2016. Vascular and Cardiac Valve Calcification in Chronic Kidney Disease. *Atheroscler open access* 1: 1–6.

Harambat, J., Van Stralen, K.J., Kim, J.J., Tizard, E.J., 2012. Epidemiology of chronic kidney disease in children. *Pediatr. Nephrol.* 8:9-21



Hennericci, P.-J., Csiba, S.M., 2007. Mannheim Carotid Intima-Media Thickness Consensus (2004 – 2006). *Cerebrovasc Dis* 20: 75–80.

Isakova, T., Wahl, P., Vargas, G.S., Gutiérrez, O.M., Scialla, J., Xie, H., Appleby, D., Nessel, L., Bellovich, K., Chen, J., Hamm, L., Gadegbeku, C., Horwitz, E., Townsend, R.R., Anderson, C.A.M., Lash, J.P., Hsu, C., Leonard, M.B., Wolf, M., 2011a. Fibroblast growth factor 23 is elevated before parathyroid hormone and phosphate in chronic kidney disease. *Kidney Int.* 79: 1370–1378.

Isakova, T., Wahl, P., Vargas, G.S., Gutiérrez, O.M., Scialla, J., Xie, H., Appleby, D., Nessel, L., Bellovich, K., Chen, J., Hamm, L., Gadegbeku, C., Horwitz, E., Townsend, R.R., Anderson, C.A.M., Lash, J.P., Hsu, C.Y., Leonard, M.B., Wolf, M., 2011b. Fibroblast growth factor 23 is elevated before parathyroid hormone and phosphate in chronic kidney disease. *Kidney Int.* 79: 1370–1378.

Isakova, T., Xie, H., Yang, W., Xie, D., Anderson, A.H., Scialla, J., Wahl, P., Gutierrez, O.M., Steigerwalt, S., He, J., Schwartz, S., Lo, J., Ojo, A., Sondheimer, J., Hsu, C.Y., Lash, J., Leonard, M., Kusek, J.W., Feldman, H.I., Wolf, M., Chronic Renal Insufficiency Cohort Study, G., 2011c. Fibroblast growth factor 23 and risks of mortality and end-stage renal disease in patients with chronic kidney disease. *JAMA* 305: 2432–2439.

Järvisalo, M.J., Jartti, L., Näntö-Salomnen, K., Irjala, K., Rönnemaa, T., Hartiala, J.J., Celermajer, D.S., Raitakari, O.T., 2001. Increased Aortic Intima-Media Thickness. *Circulation* 104: 2943–2947.

KDIGO, 2013. KDIGO 2012 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. *Kidney Int.* 3: Supplement.

Kidney Disease: Improving Global Outcomes (KDIGO) CKD-MBD Work Group, 2009. KDIGO clinical practice guideline for the diagnosis, evaluation, prevention, and treatment of Chronic Kidney Disease-Mineral and Bone Disorder (CKD-MBD). *Kidney Int. Suppl.* 2: 1–130.

Koçyıldız, A., Doğan, M., Yılmaz, İ., Çağlar, M., Hatipoğlu, C., 2014. Relation of age and sex with carotid intima media thickness in healthy children. *Turkish J. Med. Sci.* 72: 422–426.

Liu, D., Alvarez-elías, A.C., Wile, B., Belostotsky, V., Filler, G., 2017. Deviations from the expected relationship between serum FGF23 and other markers in children with CKD : a cross-sectional study. *BMC Nephrol.* 18: 1–10.

Liu, S., Quarles, L.D., 2007. How Fibroblast Growth Factor 23 Works. *J. Am. Soc. Nephrol.* 18: 1637–1647.

Lopes, R., Morais, M.B. de, Oliveira, F.L.C., Brecheret, A.P., Abreu, A.L.C.S., Andrade, M.C. de, 2018. Evaluation of carotid intima-media thickness and factors associated with cardiovascular disease in children and adolescents with chronic kidney disease. *J. Pediatr. (Rio J.)*. 1–9.

- Lu, X., Hu, C., 2017. Chronic Kidney Disease-Mineral and Bone Disorder : Review KloTho / FGF23 Axis in Chronic Kidney. *Kidney Dis* 3: 15–23.
- Mirza, M.A.I., Larsson, A., Lind, L., Larsson, T.E., 2009. Circulating fibroblast growth factor-23 is associated with vascular dysfunction in the community. *Atherosclerosis* 205: 385–390.
- Muhaisen, R.M., Sharif, F.A., Yassin, M.M., 2012. Risk factors of cardiovascular disease among children with chronic kidney disease in Gaza strip. *J. Cardiovasc. Dis. Res.* 3: 91–98.
- Negri, A.L., 2014. Fibroblast growth factor 23: Associations with cardiovascular disease and mortality in chronic kidney disease. *Int. Urol. Nephrol.* 46: 9–17.
- Noto, N., Kato, M., Abe, Y., Kamiyama, H., Karasawa, K., Ayusawa, M., 2015. Reassessment of carotid intima - media thickness by standard deviation score in children and adolescents after Kawasaki disease. *Springerplus* 4: 1–7.
- O'Leary, D.H., Bots, M.L., 2010. Imaging of atherosclerosis: Carotid intima-media thickness. *Eur. Heart J.* 31: 1682–1689.
- Oliveira, R.B., Cancela, A.L.E., Graciolli, F.G., Reis, L.M. Dos, Draibe, A., Cuppari, L., Carvalho, A.B., Jorgetti, V., Canziani, M.E., Moyse, R.M.A., 2010. Early Control of PTH and FGF23 in Normophosphatemic CKD Patients : A New Target in CKD-MBD Therapy ? *Clin J Am Soc Nephrol* 5 5: 286–91.
- Pardede, S., Chunnaedy, S., 2009. Penyakit Ginjal Kronik. *Sari Pediatr.* 11: 1035–1040.
- Portale, A.A., Wolf, M., Jüppner, H., Messinger, S., Kumar, J., Wesseling-Perry, K., Schwartz, G.J., Furth, S.L., Warady, B.A., Salusky, I.B., 2014. Disordered FGF23 and mineral metabolism in children with CKD. *Clin. J. Am. Soc. Nephrol.* 9: 344–353.
- Portale, A.A., Wolf, M., Jüppner, H., Messinger, S., Kumar, J., Wesseling-Perry, K., Schwartz, G.J., Furth, S.L., Warady, B.A., Salusky, I.B., 2014. Disordered FGF23 and mineral metabolism in children with CKD. *Clin. J. Am. Soc. Nephrol.* 9: 344–353.
- Portale, A.A., Wolf, M.S., Messinger, S., Perwad, F., Jüppner, H., Warady, B.A., Furth, S.L., Salusky, I.B., 2016. Fibroblast growth factor 23 and risk of CKD progression in children. *Clin. J. Am. Soc. Nephrol.* 11: 1989–1998.
- Pulupessy, J., 1994. Penyakit jantung koroner, in: Buku Ajar Kardiologi Anak. Ikatan Dokter Anak Indonesia, Jakarta, pp. 404–15.
- Qureshi, G., Brown, R., Salciccioli, L., Qureshi, M., Rizvi, S., Farhan, S., Lazar, J., 2007. Relationship between aortic atherosclerosis and non-invasive measures of arterial stiffness. *Atherosclerosis* 195: 190–194.

R, Oke Rina, Rosmayanti, Ramayati R, R., 2013. Luaran Pasien Anak dengan Gagal Ginjal Terminal. *Sari Pediatr.* 14: 277–282.

Recio-Mayoral, A., Banerjee, D., Streather, C., Kaski, J.C., 2011. Endothelial dysfunction, inflammation and atherosclerosis in chronic kidney disease - a cross-sectional study of predialysis, dialysis and kidney-transplantation patients. *Atherosclerosis* 216: 446–451.

Salusky, I.B., Wesseling-Perry, K., Salusky, I.B., 2013. Chronic Kidney Disease : Mineral and Bone Disorder in Children. *YSNEP* 33: 169–179.

Scialla, J.J., Lau, W.L., Reilly, M.P., Isakova, T., Yang, H.Y., Crouthamel, M.H., Chavkin, N.W., Rahman, M., Wahl, P., Amaral, A.P., Hamano, T., Master, S.R., Nessel, L., Chai, B., Xie, D., Kallem, R.R., Chen, J., Lash, J.P., Kusek, J.W., Budoff, M.J., Giachelli, C.M., Wolf, M., 2013. Fibroblast growth factor 23 is not associated with and does not induce arterial calcification. *Kidney Int.* 83: 1159–1168.

Shioi, A., Nishizawa, Y., 2009. Vascular Calcification in Chronic Kidney Disease: Pathogenesis and Clinical Implications. *J. Ren. Nutr.* 19: 78–81.

Silverstein, D.M., 2009. Inflammation in chronic kidney disease: Role in the progression of renal and cardiovascular disease. *Pediatr. Nephrol.* 24: 1445–1452.

Smith, E.R., McMahon, L.P., Holt, S.G., 2014. Fibroblast growth factor 23. *Ann. Clin. Biochem.* 23:2-6

Spiotta, R.T., Luma, G.B., 2008. Evaluating obesity and cardiovascular risk factors in children and adolescents. *Am. Fam. Physician* 78: 1052–1058.

Stein, J.H., Korcarz, C.E., Hurst, R.T., Lonn, E., Kendall, C.B., Mohler, E.R., Najjar, S.S., Rembold, C.M., Post, W.S., 2008. Use of Carotid Ultrasound to Identify Subclinical Vascular Disease and Evaluate Cardiovascular Disease Risk : A Consensus Statement from the American Society of Echocardiography Carotid Intima-Media Thickness Task Force Endorsed by the Society for Vascula. *J. Am. Soc. Echocardiogr.* 53792: 93–111.

Tomasello, S., 2008. Secondary hyperparathyroidism and chronic kidney disease. *Diabetes Spectr.* 2:1-10

Van Husen, M., Fischer, A.K., Lehnhardt, A., Klaassen, I., Möller, K., Müller-Wiefel, D.E., Kemper, M.J., 2010. Fibroblast growth factor 23 and bone metabolism in children with chronic kidney disease. *Kidney Int.* 78: 200–206.

Vervloet, M., Cozzolino, M., 2017. Vascular calcification in chronic kidney disease: different bricks in the wall? *Kidney Int.* 91: 808–817.

Wesseling-Perry, K., Salusky, I.B., 2013. Chronic Kidney Disease: Mineral and Bone Disorder in Children. *Semin. Nephrol.* 33: 169–179.



UNIVERSITAS
GADJAH MADA

PENINGKATAN KADAR FIBROBLAST GROWTH FACTOR 23 SEBAGAI PENANDA AWAL KEJADIAN
ATEROSKLEROSIS PADA

PASIEN CHRONIC KIDNEY DISEASE ANAK

TIARA NURLITA SARI, dr. Suryono Yudha Patria, Ph.D, Sp.A(K); dr. Sasmito Nugroho, Sp.A(K)

Universitas Gadjah Mada, 2019 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Wesseling, K., Bakkaloglu, S., Salusky, I., 2008. Chronic kidney disease mineral and bone disorder in children. *Pediatr. Nephrol.* 23: 195–207.

Wetmore, J.B., Liu, S., Krebill, R., Menard, R., Quarles, L.D., 2010. Effects of Cinacalcet and Concurrent Low-Dose Vitamin D on FGF23 Levels in ESRD. *Clin J Am Soc Nephrol* 5: 110–116.

Yang, X., Liaw, L., Prudovsky, I., Brooks, P.C., Vary, C., Oxburgh, L., Friesel, R., 2015. Fibroblast Growth Factor Signaling in the Vasculature. *Curr. Atheroscler. Rep.* 3:1-15

Zhang, M., Yan, J., Zhu, M., Ni, Z., 2015. Fibroblast Growth Factor 23 Predicts Coronary Calcification and Poor Prognosis in Patients with Chronic Kidney Disease Stages 3-5D. *Ann. Clin. Lab. Sci.* 45: 17–22.