

**References:**

Afshin, F.; Catherine, M. and Shanahanb (2005): Biology of Vascular Calcification in Renal Disease. *Nephron Exp Nephrol*.101:e134

Allison B.L.; Kathryn P.B.; Joshua P.L.; Carl D.L.; Julie T.Z.; Stephen S.R.; Thomas C.R.J.; Jeffrey C., Barry I.F. and Donald W. (2007): Association of α 2-Heremans-Schmid Glycoprotein Polymorphism with Subclinical Atherosclerosis; *Clinical Endocrinology & Metabolism*. 92, 1: 345.

Alper, K.; Bulent, A.; Tuncay, H.; Deniz, A.; Mustafa, A.; Serafettin, K.; and Cetin, T. (2009): Association Among Serum Fetuin-A Level, Coronary Artery Calcification, and Bone Mineral Densitometry in Maintenance Hemodialysis Patients. *Artificial Organs* 33(10):844.

Angela, Y.W.; Jean, W.; Christopher, W.L.; Mei, W.; Iris, H.C.; Ping, G.; Siu-Fai, L.; Philip, K.L. and John, E.S. (2005): Associations of serum fetuin-A with malnutrition, inflammation, atherosclerosis and valvular calcification syndrome and outcome in peritoneal dialysis patients. *Nephrology Dialysis Transplantation* 20(8):1676.

Archdeacon, P.; and Detwiler, R.K. (2008): Bone morphogenetic protein 7 (BMP7); a critical role in kidney development and a putative modulator of kidney injury. *Adv Chronic Kidney Dis*. 15:314.

Ausubel, F. and Benfey, P. (2002): Arabidopsis functional genomics; *Plant Physiol*; 129(2):393.



- Axelsson, J.; Wang X.; Ketteler, M.; Qureshi, A.R.; Heimbürger, O.; Bárány, P.; Lindholm, B.; Nordfors, L. and Stenvinkel, P. (2008):** Is fetuin-A/alpha2-Heremans-Schmid glycoprotein associated with the metabolic syndrome in patients with chronic kidney disease. *Am J Nephrol.* 28(4):669.
- Bernd, L.; Sabo, D.; Zahlten, A.; Niemeyer, P.; Daecke, W. and Simank, H.G. (2003):** Experiences with vascular pedicled fibula in reconstruction of osseous defects in primary malignant bone tumors; *Orthopade*; 32(11):983.
- Blacher, J.; Safar, M.E.; Guerin. A.P.; Pannier, B.; Marchais, S.J. and London, G.M. (2003):** Aortic pulse wave velocity index and mortality in end-stage renal disease. *Kidney Int.*; 63: 1852.
- Braun, J.; Oldendorf, M.; Moshage, W.; Heidler, R.; Zeitler, E. and Luft, F.C. (1996):** Electron beam computed tomography in the evaluation of cardiac calcification in chronic dialysis patients. *Am J Kidney Dis.*; 27: 394.
- Buijs, J.T.; Rentsch, C.A.; van der Horst G.; van Overveld P.G.; Wetterwald, A.; Schwaninger, R.; Henriquez, N.V.; Ten Dijke P.; Borovecki, F.; Markwalder, R.; Thalmann, G.N.; Papapoulos S.E.; Pelger, R.C.; Vukicevic, S.; Cecchini, M.G.; Löwik, C.W. and van der Pluijm, G. (2007):** BMP7, a putative regulator of epithelial homeostasis in the human prostate, is a potent inhibitor of prostate cancer bone metastasis in vivo. *Am J Pathol.* 171; 739.



- Caglar, K.; Yilmaz, M.I.; Saglam, M.; Cakir, E.; Kilic, S.; Sonmez, A.; Eyileten, T.; Yenicesu, M.; Oguz, Y.; Tasar, M.; Vural, A.; Ikizler, T.A.; Stenvinkel, P. and Lindholm B. (2008):** Serum fetuin-a concentration and endothelial dysfunction in chronic kidney disease. *Nephron Clin Pract.*; 108:c233.
- Cain, J.E.; Hartwig, S.; Bertram, J.F. and Rosenblum, N.D. (2008):** Bone morphogenetic protein signaling in the developing kidney: present and future. *Differentiation*; 76, 831.
- Chen, D.; Zhao, I.; and Mundy, G.R. (2004).** "Bone Morphogenetic Proteins". *Growth Factors* 22 : 233.
- Chen, D.i.; Zhao, M.M. and Gregory, R. (2009):** "Bone Morphogenetic Proteins". *Growth Factors* 22 (4): 233.
- Chen, N.X.; O'Neill, K.D.; Duan; D. and Moe, S.M. (2002):** Phosphorus and uremic serum up-regulate osteopontin expression in vascular smooth muscle cells. *Kidney Int.*; 62: 1724.
- Cheng, H.; Jiang, W.; Phillips, F.; Haydon, R.; Peng, Y.; Zhou, L.; Luu, H.; An N.; Breyer, B.; Vanichakarn, P.; Szatkowski, J.; Park, J. and He T. (2003):** "Osteogenic activity of the fourteen types of human bone morphogenetic proteins. *J Bone Joint Surg Am* 85-A (8): 1544.
- Chertow, G.M.; Burke, S.K. and Raggi, P. (2002):** Sevelamer attenuates the progression of coronary and aortic calcification in hemodialysis patients. *Kidney Int.*; 62: 245.



Christophe; N.R.; Sabine R.; Alexander H.; Theyencheri N.; Matthias, B. and Willi J.D. (2009): *A Shielding Topology Stabilizes the Early Stage Protein–Mineral Complexes of Fetuin-A and Calcium Phosphate: A Time-Resolved Small-Angle X-ray Study. ChemBioChem, 10, 735.*

Coen, G.; Ballanti, P.; Balducci, A.; Grandi, F.; Manni, M.; Mantella, D.; Pierantozzi, A.; Ruggeri, M.; Sardella, D.; Sorbo, G. and Bonucci, E.(2006): *Renal osteodystrophy: alpha-Heremans Schmid glycoprote/fetuin-A, matrix GLA protein serum levels, and bone histomorphometry, Am J Kidney Dis.; 48:106.*

Coen, G.; Manni, M.; Agnoli, A.; Balducci, A.; Dessi, M.; De Angelis, S.; jankovic, L.; Mantella, D. and Morosetti, M. (2006): *Cardiac calcifications fetuin A and other risk factors in hemodialysis patients. ASAIJ; 52: 150.*

Cozzolino M.; Dusso AS.; Liapis H.; Finch J.; Lu Y.; Burke SK. and Slatopolsky E. (2002): *The effects of sevelamer hydrochloride and calcium carbonate on kidney calcification in uremic rats. J Am Soc Nephrol.; 13: 2299.*

Cozzolino, M.; Galassi, A.; Bellasi, A.; Gallieni, M. and Brancaccio D. (2007): *The bone-vasculature-axis interaction: new insights into the pathogenesis of vascular calcification. G Ital Nefrol. 24(5):409.*



- Cozzolino, M.; Gallieni, M. and Brancaccio, D. (2009):** *Inflammation and vascular calcification in chronic kidney disease: The role of Fetuin-A. Cytokine. 30:211.*
- Cozzolino, M.; Mazzaferro, S.; Pugliese, F. and Brancaccio, D. (2008):** *Vascular Calcification and Uremia: What Do We Know? Am J Nephrol;28:339.*
- Davies, M.R.; Lund, R.J. and Hruska, K.A.(2003):** *BMP-7 Is an Efficacious Treatment of Vascular Calcification in a Murine Model of Atherosclerosis and Chronic Renal Failure. J Am Soc Nephrol.; 14: 1559.*
- Dechent, J.W.; Schäfer, C.; Ketteler, M. and McKee, M.D. (2008):** *Mineral chaperones: a role for fetuin-A and osteopontin in the inhibition and regression of pathologic calcification. J Mol Med. Apr;86(4):379.*
- Dervisoglu, E.; Kir, H.M.; Kalender, B.; Caglayan, C. and Eraldemir, C. (2008):** *Serum fetuin--a concentrations are inversely related to cytokine concentrations in patients with chronic renal failure. Cytokine. 44:323.*
- Doupis, J.; Lyons, T.E.; Wu, S.; Gnardellis, C.; Dinh, T. and Veves, A. (2009):** *Microvascular Reactivity and Inflammatory Cytokines in Painful and Painless Peripheral Diabetic Neuropathy; J Clin Endocrinol Metab. 379:88.*



Dziegielewska, K.M.; Daikuhara Y.; Ohnishi T.; Waite M.P.; Habgood M.D.; Lane M.A.; Potter A.; and Saunders, N.R. (2000) : *“Fetuin in the developing neocortex of the rat: distribution and origin.” J Comp Neurol. 423:373.*

Efstratiadis, G.; Koskinas, K.; and Pagourelas, E. (2007): *Coronary calcification in patients with end-stage renal disease: a novel endocrine disorder?Hormones, 6(2):120.*

Eva, F.; Norbert, S.; Kathrin, S.; Dagmar, D.; Matthias, B.S.; Andreas, F.; Hans-Georg, J.; Hans-Ulrich, H.; Norbert, H.; Heiner, B. and Cornelia, W. (2009): *Association of AHSG Gene Polymorphisms With Fetuin-A Plasma Levels and Cardiovascular Diseases in the EPIC-Potsdam Study. Circ Cardiovasc Genet. ;2:607.*

Fadem, S. (2008): *Calculators for HealthCare Professionals. National Kidney Foundation. 13:104 .*

Gene ontology consortium (2007): *gene card website Home page.*

Google image website.

Haas, M.; Leko-Mohr, Z.; Roschger, P.; Kletzmayer, J.; Schwartz, C.; Domenig, C.; Zsontsich, T.; Klaushofer, K.; Delling, G.; and Oberbauer, R. (2002): *Osteoprotegerin and parathyroid hormone as markers of high-bone turnover osteodystrophy and decreased bone mineralization in hemodialysis patients; Am J Kidney Dis,39:580.*



- Heiss, A.; Eckert, T.; Aretz, A.; Richtering, W.; van Dorp, V.; Schfer, C. and Jahnen-Dechent, W.(2008):** inhibitors of kynureninase from *Pseudomonas*. *J. Biol. Chem.*, 23, 1244.
- Heiss, C.; Anderson, J.; and Phillips, R.S. (2003):** Differential effects of bromination on substrates and inhibitors of kynureninase from *Pseudomonas fluorescens*; *Org Biomol Chem* ;1(2):288.
- Heiss; A., Jahnen-Dechent; W., Endo; H. and Schwahn; D.(2007):** Differential effects of bromination on substrates. *Biointerphases*, 2, 16–20.
- Hennis, B.C.; Frants, R.R.; Bakker, E.; Vossen, R.H.; van der Poort, E.W.; Blonden, L.A.; Cox, S.; Khan, P.M.; Spurr, N.K.; and Kluft, C. (1994):** Evidence for the absence of intron H of the histidine-rich glycoprotein (HRG) gene: genetic mapping and in situ localization of HRG to chromosome 3q28-q29. *Genomics*;19(1):195.
- Hermans, M.M.; Brandenburg, V.; Ketteler, M.; Kooman, J.P.; van der Sande, F.M.; Gladziwa, U.; and Rensma, P. (2007):** Study on the relationship of serum fetuin-A concentration with aortic stiffness in patients on dialysis *Nephrol Dial Transplant*. 18(5):85.
- Hermans, M.M.H; Brandenburg V.; Ketteler M.; Kooman, J.P; Sande F.M; Boeschoten, E.W; Leunissen, K.M.L; Krediet, R.T; and Dekker, F.W. (2007) :** Association of serum fetuin-A levels with mortality in dialysis patients. *Kidney International* 72, 202–207.



Hsu, S.J.; Nagase, H.; and Balmain, A. (2004): Identification of Fetuin-B as a member of a cystatin-like gene family on mouse chromosome 16 with tumor suppressor activity; *Genome*, 47(5):931.

<http://en.wikipedia.org/>, the free encyclopedia.

http://en.wikipedia.org/wiki/Bone_morphogenetic_protein

Ismail, S.; Levent, K.; Ali, T.; Oktay, B.; Didem, L.K.; Yasar, Y.; Arif Y.; Necati, G. and Nurullah, A. (2010): Fetuin-A and interleukin-18 levels in ankylosing spondylitis. *International Journal of Rheumatic Diseases* ; 13: 75.

Ix, J.H.; Chertow, G.M.; Shlipak, M.G.; Brandenburg, V.M.; Ketteler, M.; and Whooley, M.A. (2007) : Association of fetuin-A with mitral annular calcification and aortic stenosis among persons with coronary heart disease. *Heart and Soul Study*; 115:2533.

Jahnen-Dechent, W.; Schäfer, C.; Ketteler, M. and McKee, M.D. (2008): Mineral chaperones: a role for fetuin-A and osteopontin in the inhibition and regression of pathologic calcification. *J Mol Med.*; 86(4):379.

Joanne, M.; Bargman and Karl Skoreck (2008): Chronic Kidney Disease in *Harrison's Principles of Internal Medicine - 17th Ed.* Edited by Fouci; Braunwald; Kasper; Hauser, L.; Jameson; Loscalzo. Chapter 274:1762.



- Kallner, A.; Ayling, P.A. and Khatami, Z. (2008).**: "Does eGFR improve the diagnostic capability of S-Creatinine concentration results? A retrospective population based study". *Int J Med Sci* 5 (1): 9.
- Katsuhito, M.; Masanori, E.; Takahiro, A.; Hisayo, Y.; Megumi, T.; Eiko, L.; Koka, M.; Hidenori, K.; Tetsuo, S.; Masaaki, I. and Yoshiki, N. (2007) :** Association of serum fetuin-A with carotid arterial stiffness. *Clinical Endocrinology* 66: 246.
- Katsuhito, M.; Yuji, I.; Shuichi, J.; Masanori, E.; Atsushi, S.; Hidenori, K.; Tetsuo, S.; Eiji, I.; Masaaki, I.; Kazuhiro, H. and Yoshiki, N. (2010):** Fetuin-A is associated with calcified coronary artery disease. *Coronary Artery Disease*, 21:281.
- Kaysen, G.; Chertow, G.M.; Adhikarla, R.; Young, B.; Ronco, C. and Levin, N.W. (2001):** Inflammation and dietary protein intake exert competing effects on serum albumin and creatinine in hemodialysis patients. *Kidney Int* ; 60: 333.
- Kestenbaum, B.; and Belozeroff, V. (2007):** Mineral metabolism disturbances in patients with chronic kidney disease. *Eur J Clin Invest.* 37(8):607.
- Ketteler, M.; Bongartz, P.; Westenfeld, R.; Wildberger, J.E.; Mahnken, A.H.; Bohm, R.; Metzger, T.; Wanner, C.; Jahnke-Dechent, W.; and Floege, J. (2003):** Association of low fetuin-A (AHSG) concentrations in serum with cardiovascular mortality in patients on dialysis: a cross-sectional study. *Lancet*; 361: 827.



- Kirkpantur, A.; Altun, B.; Hazirolan, T.; Akata, D.; Arici, M.; Kirazli, S.; and Turgan, C. (2009):** Association Among Serum Fetuin-A Level, Coronary Artery Calcification, and Bone Mineral Densitometry in Maintenance Hemodialysis Patients Artif Organs, 33 (10) : 145.
- Klausen, K.P.; Scharling, H.; and Jensen, J.S. (2006):** Very low level of microalbuminuria is associated with increased risk of death in subjects with cardiovascular or cerebrovascular diseases. *J Intern Med*; 260: 231.
- Koleganova, N.; Piecha, G.; Ritz, E.; Schmitt, C.P.; and Gross, M.L. (2009):** A calcimimetic (R-568), but not calcitriol, prevents vascular remodeling in uremia. *Kidney Int. Jan*;75(1):60.
- Kuzniar, J.; Porazko, T.; and Klinger, M. (2008):** Relationship between fetuin-A concentration, elevated levels of inflammatory markers, and arterial wall stiffness in end-stage kidney disease. *J Ren Nutr.* 18(1):83.
- Lezaic, V.; Tirmenstajn-Jankovic, B.; Bukvic, D.; Vujisic, B.; Perovic, M.; Novakovic, N.; Maric, I.; and Djukanovic, L.j. (2009):** Efficacy of hyperphosphatemia control in the progression of chronic renal failure and the prevalence of cardiovascular calcification. *Clin Nephrol.* 71(1):21.
- Locatille, F.; Canaud, B.; Eckardt, K.U.; Stenvinkle, P.; Wanner, C.; and Zoccali, C. (2003):** oxidative stress in end stage renal disease *Nephrol. Dial. Transplant.* Jul; 18 (7): 1272.



London, G.M. (2003): Cardiovascular disease in chronic renal failure: pathophysiologic aspects. *Semin Dial.*; 16: 85.

London, G.M.; Guerin, A.P.; Marchais, S.J.; Metivier, F.; Pannier, B.; and Adda, H. (2003): Arterial media calcification in end-stage renal disease: impact on all-cause and cardiovascular mortality. *Nephrol Dial Transplant.*; 18: 1731.

London, G.M.; Marchais, S.J.; Safar, M.E.; Genest, A.F.; Guerin, A.P.; Metivier, F.; Chedid, K.; and London, A.M. (1990): Aortic and large artery compliance in end-stage renal failure. *Kidney Int.*; 37: 137.

Lorz, C.; Benito, A.; Ucero, A.C.; Santamaría, B.; and Ortiz, A. (2009): Trail and kidney disease. *Front Biosci.*14:3740.

Luis, H.E.; Naeema, G.; Atif, N.Q.; Nehal, N.M. and Muredach, P.R. (2010): Relationship of fetuin-A to lipid abnormalities associated with metabolic syndrome in type 2 diabetes mellitus (T2DM). *JACC* March 9, 55, issue 10:162.

Madero, M.; Sarnak, M.J.; Wang, X.; Greene, T.; Beck, G.J.; Kusek, J.W.; Collins, A.J.; Levey, A.S.; and Menon, V. (2009): Uric Acid and Long term Outcomes in CKD. *Am J Kidney Dis.* 19:247.

Marcel, R.; Maximilian von, E.; Uwe, H.; Dietrich, R.; Hermann, B.; and Lutz, P. (2010): Serum Fetuin-A, Cardiovascular Risk Factors, and Six-Year Follow-up Outcome in Patients With Coronary Heart Disease. *Am J Cardiol* ;105:1666.



Marhaug, G.; Shah, V.; Shroff, R.; and Varsani, H. (2008) : Age-dependent inhibition of ectopic calcification: a possible role for fetuin-A and osteopontin in patients with juvenile dermatomyositis with calcinosis . *Rheumatology* 47(7):1031.

Marsche, G.; Frank, S.; Hrzenjak, A.; Holzer, M.; Dirnberger, S.; Wadsack, C.; Scharnagl, H.; Stojakovic, T.; Heinemann, A.; and Oettl, K. (2009): Plasma-advanced oxidation protein products are potent high-density lipoprotein receptor antagonists in vivo; *Circ Res.* 27;104 (6):750.

Masanori, E.; Katsuhito, M.; Eiko, L.; Naoya, K.; Yuko, Y.; Shoko, T.; Tomoaki, M.; Hidenori, K.; Tetsuo, S.; Masaaki, I.; and Yoshiki, N. (2010): Fetuin-A and atherosclerotic calcified plaque in patients with type 2 diabetes mellitus. *Metabolism Clinical and Experimental* 59,: 873.

Mathew, TH; Johnson, DW. and Jones, GR. (2007): "Chronic kidney disease and automatic reporting of estimated glomerular filtration rate: revised recommendations". *Med. J. Aust.* 187 (8): 459.

Mathias, V.; Dagmar-Christiane, F.; Max, R.; Wolfgang, S. and Dieter, H. (2010): Fibroblast growth factor (FGF)-23 and fetuin-A in calcified carotid atheroma. *Histopathology* , 56, 775.

Matsui, I.; Hamano, T.; Mikami, S.; Fujii, N.; Takabatake, Y.; Nagasawa, Y.; Kawada, N.; Ito, T.; Rakugi, H.; Imai, E.; and Isaka, Y. (2009): Fully phosphorylated fetuin-A forms a mineral complex in



the serum of rats with adenine induced renal failure; Kidney Int 14:300.

Matsuo, S.; Imai, E.; Horio, M.; Yasuda, Y.; Tomita, K.; Nitta, K.; Yamagata, K.; Tomino, Y.; Yokoyama, H.; and Hishida, A. (2009): on behalf of the collaborators developing the Japanese equation for estimated GFR. ; *Am J Kidney Dis.* 31:235.

Mazzaferro, S.; Pasquali, M.; Pugliese, F.; Barresi, G.; Carbone I.; Francone, M.; Sardella, D.; and Taggi, F. (2007): Serum levels of calcification inhibition proteins and coronary artery calcium score: comparison between transplantation and dialysis. *Am J Nephrol.*; 27(1) :75.

Mazzaferro, S.; Pasquali, M.; Taggi, F.; Baldinelli, M.; Conte, C.; Muci, M.L.; Pirozzi, N.; Carbone, I.; and Pugliese, F. (2009): Progression of coronary artery calcification in renal transplantation and the role of secondary hyperparathyroidism and inflammation; *Clin J Am Soc Nephrol.* 4(3):685.

Mehrotra, R.; Tong, L.L.; Shavelle, D.M.; Budoff, M.; and Adler, S. (2008): Poor correlation between coronary artery calcification and obstructive coronary artery disease in an end-stage renal disease patient. *Hemodial Int.* Jan; 12(1):16.

Metry, G.; Stenvinkel, P.; Qureshi, A.R.; Carrero, J.J.; Yilmaz, M.I.; Bárány, P.; Snaedal, S.; Heimbürger, O.; Lindholm, B.; and Suliman, M.E. (2008): Low serum fetuin-A concentration predicts



poor outcome only in the presence of inflammation in prevalent haemodialysis patients. *Eur J Clin Invest.* Nov; 38(11):804.

Mitu, G. and Hirschberg, R. (2008): Bone morphogenetic protein-7 (BMP7) in chronic kidney disease. *Front Biosci.* 13:4726.

Moe, S. (2004): Calcific uremic arteriolopathy: a new look at an old disorder. *NEPHSAP*; 3: 77.

Moe, S.M.; and Chen, N.X. (2003): Calciphylaxis and vascular calcification: a continuum of extra-skeletal osteogenesis. *Pediatr Nephrol.*; 18: 969.

Moe, S.M.; Drüeke, T.; Lameire, N.; and Eknoyan, G. (2007): Chronic kidney disease-mineral-bone disorder: a new paradigm. *Adv Chronic Kidney Dis.* 14(1):3.

Moe, S.M.; Duan, D.; Doehle, B.P.; O'Neill, K.D.; and Chen, N.X. (2003): Uremia induces the osteoblast differentiation factor *Cbfa1* in human blood vessels. *Kidney Int.*; 63: 1003.

Moe, S.M.; O'Neill, K.D.; Fineberg, N.; Persohn, S.; Ahmed, S.; Garrett, P.; and Meyer, C.A. (2003): Assessment of vascular calcification in ESRD patients using spiral CT. *Nephrol Dial Transplant.*; 18: 1152.

Moe, S.M.; O'Neill, K.D.; Resterova, M.; Fineberg, N.; Persohn, S.; and Meyer, C.A. (2004): Natural history of vascular calcification in dialysis and transplant patients. *Nephrol Dial Transplant*; 19: 2387.



- Moe, S.M.; Reslerova, M.; Ketteler, M.; O'Neill, K.; Duan, D.; Koczman, J.; Westenfeld, R.; Jahnke-Dechent, W.; and Chen, N.X. (2005):** Role of calcification inhibitors in the pathogenesis of vascular calcification in chronic kidney disease; *Kidney Int.* 67(6): 2295.
- Moon-Wang, A.; Jean, W.; Lam, K.; Wang, M.; Gao, P. and John, E. (2005):** Association of serum fetuin A with malnutrition , inflammation , atherosclerosis and valvular calcification syndrome and outcome in peritoneal dialysis patients : *Nephrology dialysis transplantation* 20 : 1676.
- Mori, K. and Jono, S. (2007):** Calcified coronary artery disease and serum markers. *Clin Calcium.*; 17(3):340.
- Motazed, R.; Colville-Nash, P.; Kwan, J.T. and Dockrell, M.E. (2008):** BMP-7 and proximal tubule epithelial cells: activation of multiple signaling pathways reveals a novel anti-fibrotic mechanism. *Pharm Res.* 25(10):2440.
- Nguyen-Khoa, T.; Massy, Z.A. and De Bandt J.P. (2001):** Oxidative stress and haemodialysis: role of inflammation and duration of dialysis treatment. *Nephrol Dial Transplant*; 16: 335.
- NKF. K/DOQI (2009):** clinical practice guidelines for chronic kidney disease.
- NKF.(The National Kidney Foundation) K/DOQI (Kidney Dialysis Outcomes Quality Initiative) (2002):** clinical practice guidelines



for chronic kidney disease: evaluation, classification, and stratification. Am J Kidney Dis.; 39: 266.

NKF.K/DOQI (2004): *clinical practice guidelines for chronic kidney disease.*

Okada, M. (1998): *Low-density lipoprotein cholesterol can be chemically measured J. Lab. Clin. Med., 132: 195.*

Osamu, O.; Terumi, H; Toshio Y.C.Y; Noboru, F. and Koichi, M. (2007)
: Evaluation of serum fetuin-A relationships with biochemical parameters in patients on hemodialysis. Clin Exp Nephrol 11:304.

Osamu, O.; Terumi, H; Toshio Y.C.Y; Noboru, F. and Koichi, M. (2007)
: Evaluation of serum fetuin-A relationships with biochemical parameters in patients on hemodialysis. Clin Exp Nephrol 11:304.

Patton; C.J. and Crouch; S.R. (1977): *Effects of disease on Clinical Lab.Anal. Chem. 49:464-469.*

Paul, A.P.; Thao, M.T.N.; and Matthew, K.W. (2003): *Biochemical Characterization of the Serum Fetuin-Mineral Complex; J. Biol. Chem., 278, (24): 22153.*

Pedersen, K. O. (1944) : *Fetuin, a new globin isolated from serum. Nature. 154:575.*



- Perneger, T.V.; Whelton, P.K. and Klag, M.J. (1994):** "Risk of kidney failure associated with the use of acetaminophen, aspirin, and nonsteroidal antiinflammatory drugs". *N. Engl. J. Med.* 331 (25): 1675.
- Pertosa, G.; Simone, S.; Ciccone, M.; Porreca, S.; Zaza, G.; Dalfino, G.; Memoli, B.; Procino, A.; Bonomini, M.; Sirolli, V.; Castellano, G.; Gesualdo, L.; Ktena, M.; Schena, F.P.; and Grandaliano, G. (2009):** Serum Fetuin A in Hemodialysis: A Link Between Derangement of Calcium-Phosphorus Homeostasis and Progression of Atherosclerosis? *Am J Kidney Dis.* Jan 22.
- Peter, S.; Kai, W.; Abdul R.Q.; Jonas, A.; Reberto, P.; Ping, G.; Peter, B.; Markus, K.; Christoph, W.; Thomas, M.; Philipp, B.; Ralf, W.; Ulrich, G.; Leon, J.S.; Cees V.; Willi J.; and Jürgen, F. (2003):** Deficiencies of calcium-regulatory proteins in dialysis patients: A novel concept of cardiovascular calcification in uremia. *Kidney International* 63: S84.
- Porazko, T.; Kúzniar, J.; Kusztal, M.; Kúzniar, T.J.; Weyde, W.; Kuriata-Kordek, M. and Klinger, M. (2009):** IL-18 is involved in vascular injury in end-stage renal disease patients. *Nephrol Dial Transplant.* 24(2):589.
- Price, P.A.; and Lim, J.E. (2002):** The inhibition of calcium phosphate precipitation by fetuin is accompanied by the formation of a fetuin mineral complex. *J Biol Chem;* 278: 22144.



Reddi, A.H. (2004): *Bone Morphogenetic Proteins: an Unconventional Approach to Isolation of First Mammalian Morphogens". Cytokine & Growth Factor Reviews 8 (1): 11.*

Roos, M.; Richart, T.; Kouznetsova, T.; von Eynatten, M.; Lutz, J.; Heemann, U.; Baumann, M.; and Staessen, J.A.; (2009): *Fetuin-A and arterial stiffness in patients with normal kidney function. Regul Pept. Apr 10;154(1-3):39.*

Ruiz, J.; Thillet, J.; James, R.W. and Passa, P. (1994): *Association of elevated Lipoprotein (a) levels and coronary heart disease in NIDDM patients. Diabetologia, 37 (6).*

Rukshana, C.S.; Vanita, S.; Melanie, P.H.; Michael, S. and Lorenz, C. (2008): *The circulating calcification inhibitors, fetuin-A and osteoprotegerin, but not Matrix Gla protein, are associated with vascular stiffness and calcification in children on dialysis. Nephrology Dialysis Transplantation 23 (10): 3263 .*

Sandner, S.E.; Zimpfer, D.; Zrunek, P.; Rajek, A.; Schima, H.; Dunkler, D.; Grimm, M.; Wolner, E. and Wieselthaler, G.M. (2009): *Renal function and outcome after continuous flow left ventricular assist device implantation; Ann Thorac Surg. 87(4):1072.*

Schafer, C.; Heiss, A.; Schwarz, A.; Westenfeld, R.; Ketteler, M.; Floege, J.; Muller-Esterl, W.; Schinke, T.; and Jahnchen-Dechent, W. (2003): *The serum protein α 2-Heremans-Schmid glycoprotein is a systemically acting inhibitor of ectopic calcification. J Clin Invest.; 112: 357.*



Schfer, C.; Heiss, A.; Schwarz, A.; Westenfeld, R.; Ketteler, M.; Floege, J.; Mller-Esterl, W.; Schinke, T. and Jahnen-Dechent, W. (2003): *J. Clin. Invest*, 112:357.

Schiele, F. (2009): *Renal dysfunction and coronary disease: a high-risk combination; J Nephrol*. 22(1):39.

Schoppet, M.; Shroff, R.C.; Hofbauer, L.C. and Shanahan, C.M. (2008): *Exploring the biology of vascular calcification in chronic kidney disease: What's circulating? Kidney International*; 73: 384.

Schurgers, L.J.; Teunissen, K.J.; Knapen, M.H.; Geusens, P.; van der Heijde, D.; Kraijtaal, M.; van, D.; Ketteler, M.; and Vermeer, C. (2005): *Characteristics and performance of an immunosorbent assay for human matrix Gla-protein. Clin Chim Acta.*; 351(12): 131.

Sciacca, R.; Epifanio, D.; Maurizio, L.V. And Chiara, B. (2008): *Changes in serum fetuin-A and inflammatory markers levels In end-stage renal disease(ESRD): effect of a single session haemodialysis. Clin Chem Lab Med* ;46(2):212.

Sebe, A.; Leivonen, S.K.; Fintha, A.; Masszi, A.; Rosivall, L.; Kähäri, V.M. and Mucsi, I. (2008): *Transforming growth factor-beta-induced alpha-smooth muscle cell actin expression in renal proximal tubular cells is regulated by p38beta mitogen-activated protein kinase, extracellular signal-regulated protein kinase1,2 and the Smad signalling during epithelial myofibroblast trans differentiation. Nephrol Dial Transplant*. 23(5):1537.



Seyfert, U.T.; Helmling, E.; Hauck, W.; Skroch, D. and Albert, W. (1991): *Comparison of blood biocompatibility during haemodialysis with cuprophane and polyacrylonitrile membranes;Nephrol Dial Transplant; (6):428.*

Shanahan, C.M. (2005): *Mechanisms of vascular calcification in renal disease. Clin Nephrol; 63: 146.*

Sharon, M.M. and Chen, N.X. (2004): *Pathophysiology of Vascular Calcification in Chronic Kidney Disease Circulation Research.;95:560*

Sharon, M.M.; Martina, R.; Markus, K.; Kalisha O' Neill, Danxia, D.; Jacob, K.; Ralf, W.; Will, J. and Neal, X.C. (2005): *Role of calcification inhibitors in the pathogenesis of vascular calcification in chronic kidney disease (CKD). Kidney International 67, 2295.*

Shioi, A. and Nishizawa, Y. (2009): *Vascular calcification in chronic kidney disease: pathogenesis and clinical implications. J Ren Nutr. 19(1):78.*

Shlipak, M.G.; Sarnak, M.J.; Beck, G.J.; Greene, T.; Wang, X.; Kusek, J.W.; Collins, A.J.; Levey A.S. and Menon, V. (2007) : *Fetuin-A is not associated with mortality in chronic kidney disease . Kidney International 72, 1394.*



- Shoji, T.; Emoto, M. and Tabata, T. (2002):** Advanced atherosclerosis in predialysis patients with chronic renal disease : *Kidney int.* 61: 2187.
- Shroff R.C.; Shah, V.; Hiorns, M.P.; Schoppet, M.; Hofbauer, L.C.; Hawa, G.; Schurgers, L.J.; Singhal, A.; Merryweather, I.; Brogan, P, Shanahan, C.; Deanfield, J.; and Rees, L. (2008):** The circulating calcification inhibitors, fetuin-A and osteoprotegerin, but not Matrix Gla protein, are associated with vascular stiffness and calcification in children on dialysis. *Nephrol Dial Transplant.* 23(10):3263.
- Singh, A.K.; Coyne, D.W.; Shapiro, W.; and Rizkala, A.R.; (2007):** Predictors of the response to treatment in anemic hemodialysis patients with high serum ferritin and low transferrin saturation; *Kidney Int* ;71(11):1163.
- Stenvinkel, P.; Heimbürger, O.; Lindholm, B.; Kaysen, G.A. and Bergström, J. (2000) :** Are there two types of malnutrition in chronic renal failure? Evidence for relationships between malnutrition, inflammation and atherosclerosis (MIA syndrome). *Nephrol Dial Transplant* ; 15: 953.
- Stenvinkel, P.; Wang, K.; Qureshi, A.R.; Axelsson, J.; Pecoits-Filho, R.; Gao, P.; Barany, P.; Lindholm, B.; Jogestrand, T.; Heimbürger, O.; Holmes, C.; Schalling, M.; and Nordfors, L. (2005):** Low fetuin-A levels are associated with cardiovascular death: impact of variations in the gene encoding fetuin. *Kidney Int.*; 67: 2383.



- Stevens, L.A.; Coresh, J.; Greene, T. and Levey, A.S. (2006):** Assessing kidney function--measured and estimated glomerular filtration rate. *N Engl J Med.* Jun 8;354 (23) : 2473.
- Suh, K.S.; Choi, E.M.; Kwon, M.; Chon, S.; Oh, S.; Woo, J.T.; Kim, S.W.; Kim, J.W. and Kim, Y.S. (2009):** Kaempferol Attenuates 2-Deoxy-D-ribose-Induced Oxidative Cell Damage in MC3T3-E1 Osteoblastic Cells; *Biol Pharm Bull*; 32(4):746.
- Suliman, M.E, García-López, E.; Anderstam, B.; Lindholm, B. and Stenvinkel, P. (2008):** Vascular calcification inhibitors in relation to cardiovascular disease with special emphasis on fetuin-A in chronic kidney disease. *Adv Clin Chem.*;46:217.
- Thompson, D.; Pepys, M.B. and Wood; SP. (1999):** "The physiological structure of human C-reactive protein and its complex with phosphocholine.". *Structure* 7 (2): 169.
- Valdes, M.A.; Thakur, N.A.; Namdari, S.; Ciombor, D.M. and Palumbo, M. (2009):** Recombinant bone morphogenic protein-2 in orthopaedic surgery; *Arch Orthop Trauma Surg.* 12.
- Wang, A.Y.; Lam, C.W.; Wang, M.; Chan, I.H.; Yu, C.M.; Lui, S.F. and Sanderson, J.E. (2008):** Increased circulating inflammatory proteins predict a worse prognosis with valvular calcification in end-stage renal disease: a prospective cohort study. *Am J Nephrol.* ;28(4):647.



Wang, A.Y.; Woo, J.; and Lam, C.K. (2003): *Is a single time-point C-reactive protein predictive of outcome in peritoneal dialysis patients? J Am Soc Nephrol; 14: 1871.*

Wang, A.Y.; Woo, J.; Wai-Kei, L.C.; Wang, M.; Hiu-Shuen Chan I.; Gao, P.; Lui, S.; Kam-Tao, L.P. and Sanderson, J.E. (2006): *Associations of serum fetuin-A with malnutrition, inflammation, atherosclerosis and valvular calcification syndrome and outcome in peritoneal dialysis patients. Nephrology Dialysis Transplantation 21:1293.*

Wang, M.C.; Tsai, W.C.; Chen, J.Y.; and Huang, J.J. (2005): *Stepwise increase in arterial stiffness corresponding with the stages of chronic kidney disease. Am J Kidney Dis; 45: 494.*

Wanner, C. and Ritz, E. (2008): *Reducing lipids for CV protection in CKD patients-current evidence; Kidney Int Suppl. (111):24.*

Weissen-Plenz, G.; Nitschke, Y. and Rutsch, F. (2008): *Mechanisms of arterial calcification: spotlight on the inhibitors .Adv Clin Chem.; 46:263.*

Wordinger, R.J.; and Clark, A.F. (2007): *Bone morphogenetic proteins and their receptors in the eye. Exp Biol Med (Maywood). 232(8):979.*

WWW.Medscape.com: *figure of intimal calcifications.*

WWW.Medscape.com: *figure of medial calcifications.*

WWW.MEDWATCH .com



Yvonne, D.; Ulrich, Z.; Christian, R.; David, R.; Hans, Z. and Holger, H. (2010): *Accelerated Evolution of Fetuin-A (FETUA, also AHSG) is Driven by Positive Darwinian Selection, not GC-Biased Gene Conversion* Gene 463,: 49.

Zheng, S.; de Las Fuentes, L.; Bierhals, A.; Ash-Bernal, R.; Spence, K.; Slatopolsky, E.; Davila-Roman, V.G. and Delmez. J. (2009): *Relation of serum fetuin-A levels to coronary artery calcium in African-American patients on chronic hemodialysis; Am J Cardiol.* 103, (1):46.

Zhou, H.; pisitkun, T.; Aponte, A.; Yuen, P.S.; Hoffert, J.D.; Yasuda, H.; Hu, X.; Chawla, L.; Shen, R.F.; Knepper, M.A.; Star, R.A.(2006): *Exosomal Fetuin-A identified by proteomics : a novel urinary biomarker for detecting acute kidney injury. Kidney Int;* 70: 1847.

Ziolkowska, H.; Brzewski, M. and Roszkowska-Blaim, M. (2008): *Determinants of the intima-media thickness in children and adolescents with chronic kidney disease. Pediatr Nephrol.* 23(5):805.

Osawa M....Takeichi S. (1997) : *Structure of the gene encoding human alpha 2-HS glycoprotein (AHSG).*

Wajih N, (2004). : [Processing and transport of matrix gamma-carboxyglutamic acid protein and bone morphogenetic protein-2 in cultured human vascular smooth muscle cells: evidence for an uptake mechanism for serum fetuin.](#) . J Biol Chem.