

Vascular calcification, vitamin K, phosphate binders and MGP

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This research will have as aim to look at progression or decrease in vascular calcification in dialysis population with use different phosphate binders. There is a possibility that different binders bind vitamin K in a different way in intestinal...

Ethische beoordeling	Positief advies
Status	Werving gestart
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON26614

Bron

Nationaal Trial Register

Verkorte titel

Vascular calcification, vitamin K, phosphate binders and MGP

Aandoening

Vascular calcification, phosphate binders, chronic kidney disease, vitamin K, MGP

Ondersteuning

Primaire sponsor: VUmc Amsterdam

Overige ondersteuning: Nederlandse nierstichting
Shire only study medication support, no financial support

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Absolute difference between serum level of dp-ucMGP and PIVKA II at week 8 between

phosphate binder groups (between group analysis).

Toelichting onderzoek

Achtergrond van het onderzoek

Vascular calcification (VC) is a problem in patients with chronic kidney disease especially in end stage kidney disease. VC is associated with increased mortality. In recent literature there is vascular calcification which progresses with use of phosphate binders. There are some small studies which have shown that phosphate binders can bind vitamin K as well. Vitamin K is necessary in the vessel wall to counteract VC. In this trial we are taking a better look at this interaction, because if phosphate binders bind vitamin K this can cause VC.

Doel van het onderzoek

This research will have as aim to look at progression or decrease in vascular calcification in dialysis population with use different phosphate binders. There is a possibility that different binders bind vitamin K in a different way in intestinal tract and thereby cause different level of calcification. Better insight in mechanisms of vascular calcification under circumstance can lead to therapeutic options which inhibit calcification and benefit survival of dialysis patients.

Onderzoeksopzet

start: start with one of the phosphate binders

8 weeks: change of phosphate binder

16 weeks: start vitamin K2 supplementantation

20 weeks: end of trial

Onderzoeksproduct en/of interventie

treatment with calciumcarbonate or lanthanum carbonate with supplementantation of vitamin K

Contactpersonen

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Haemodialysis patients aged 18 years or above without the prospect of renal function recovery, planned renal transplantation, and life expectancy longer than six months.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

- 1 Use of vitamin K antagonists
- 2 Calcium under 2,1 mmol/l or above 2,6 mmol/l, after correction for albumin level
- 3 Pregnancy
- 4 Baseline phosphate under 1,4 mmol/l
- 5 Allergy or intolerance for study medication
- 6 PTH <15 or >65 pmol/l

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Cross-over
Toewijzing:	Gerandomiseerd
Blinding:	Open / niet geblindeerd
Controle:	Actieve controle groep

Deelname

Nederland	
Status:	Werving gestart
(Verwachte) startdatum:	03-11-2014
Aantal proefpersonen:	16
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies	
Datum:	09-12-2014
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 44005
Bron: ToetsingOnline
Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL4902

Register

NTR-old

CCMO

OMON

ID

NTR5004

NL36810.094.13

NL-OMON44005

Resultaten

Samenvatting resultaten

- 1 Arterial media calcification in end stage renal disease: impact on all cause and cardiovascular mortality. London GM, Guerin AP, Marchais S.J, et al. Nephrol Dial Transplant. 2003 Sept; 18(9): 1731-40.

- 2 Braun J, Oldenhof M, Moshage W, et al. Electron beam computed tomography in the evaluation of cardiac calcification in chronic dialysis patients. Am J Kidney Dis. 1996 Mar; 27(3): 294-401.

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- 7 Luo G, Ducy P, McKee MD, et al. Spontaneous calcification of arteries and cartilage in mice lacking matrix GLA protein. Nature 1997; 386: 78-81.

- 8 Geleijnse JM, Vermeer C, Grobbee DE, et al. Dietary intake of menaquinone is associated with a reduced risk of coronary heart disease: the Rotterdam Study. J Nutr. 2004 Nov; 134(11): 3100-5.

- 9 Furie B, Bouchard B, Furie BC. Vitamin K-dependent biosynthesis of gamma-carboxyglutamic acid. Blood 1999; 93:1798.

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- 11 Francucci CM, Ceccoli L, Rilli S, et al. Skeletal effects of oral anticoagulants. J Endocrinol Invest. 2009; 32(4 Suppl): 27-31.

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- 14 Krueger T, Westenfeld R, Ketteler M, Schurgers LJ, Floege J. Vitamin K deficiency in CKD patients, a modifiable risk factor for vascular calcification. Kidney International 2009; 76: 18-22.

- 15 Westenfeld R, Krueger T, Schlieper G, et al. Effect of vitamin K2 supplementation on functional vitamin K deficiency in hemodialysis patients: a randomized trial. Am J Kidney

Dis.2012 Feb; 59(2):186-95.

16 Koos R, Mahnken AH, Muhlenbruch G, et al. Relation of oral anticoagulation to cardiac valvular and coronary calcium assessed by multislice spiral computed tomography. Am J Cardiol 2005; 96: 747-749.

17 Takagi K, Masuda K, Yamazaki M, et al. Metal and ion and vitamin adsorption profiles of phosphate binder ion-exchange resins. Clin. Nephrol. 2010 Jan; 73(1): 30-5.

18 Sevelamer Summary Product information.

19 Pierce D, Hossack S, Poole L, et al.The effect of sevelamer carbonate and lanthanum carbonate on the pharmacokinetics of oral calcitriol.Nephrol. Dial. Transplant. 2011 May; 26(5): 1615-21.

20 Block GA, Wheeler DC, Persky MS, et al. Effects of phosphate binders in moderate CKD. J. Am. Soc. Nephrol 2012 Aug; 23(8): 1407-15.