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Probiotics in the prevention of antibiotic-associated and C. difficile diarrhoea

Submission date	Recruitment status	[_] Prospectively registered
03/04/2009	No longer recruiting	[X] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
31/07/2009	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
07/06/2016	Infections and Infestations	

Plain English summary of protocol

Background and study aims
About 1 in 3 older people who are admitted to hospital require treatment with antibiotics. An adverse effect of antibiotics is that they change the "healthy" bacteria that live in the gut. This results in diarrhoea in about 1 in 5 people who are treated with antibiotics. In addition to being distressing for the patient, diarrhoea may delay recovery from illness and prolong the hospital admission. Occasionally, antibiotic treatment results in an overgrowth of a potentially dangerous bacterium called C. difficile. This bacterium can cause a severe diarrhoeal illness that may require additional medical treatment and surgery and may cause death. There is some encouraging evidence that giving supplements of normal, "healthy" bacteria (called probiotics) by mouth together with antibiotics prevents diarrhoea. Probiotics are very safe and do not themselves cause illness in people with a normal immune system. We will use bacteria called lactobacilli that are normally found in the gut in healthy people. We intend to find-out exactly how effective and also how cost-effective this approach is.

Who can participate?
Patients aged 65 or over admitted to hospital and receiving antibiotics

What does the study involve?
Participants are randomly allocated to receive either the probiotic or a placebo (dummy) treatment daily for 21 days in addition to any other treatment. We document how many in each group go on to develop mild and severe diarrhoea and also how this affects their quality of life.

What are the possible benefits and risks of participating?
Not provided at time of registration

Where is the study run from?
Morriston Hospital (UK)

When is the study starting and how long is it expected to run for?
December 2008 to March 2011

Who is funding the study?
Health Technology Assessment Programme (UK)

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
HTA 06/39/02

Study information

Scientific Title
A multicentre, randomised, placebo controlled trial of lactic acid bacteria and bifidobacteria in the prevention of antibiotic-associated diarrhoea (AAD) and Clostridium difficile diarrhoea (CDD) in patients aged 65 years and over admitted to hospital and receiving antibiotics

Acronym
PLACIDE

Study objectives
A probiotic food supplement is effective in preventing antibiotic-associated and Clostridium difficile diarrhoea in older people admitted to hospital and receiving antibiotics.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Research Ethics Committee for Wales, 27/11/2008

Study design
Multicentre randomised controlled trial

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Antibiotic-associated diarrhoea; C. difficile diarrhoea

Interventions
1. Live bacteria of human origin: 2 strains of Lactobacillus acidophilus (CUL60, National Collection of Industrial, Food and Marine Bacteria [NCIMB] 30157 and CUL21, NCIMB 30156), Bifidobacterium bifidum (CUL20, NCIMB 30153), Bifidobacterium lactis (CUL34, NCIMB 30172). Prepared as lyophilised powder in a capsule containing 6 x 1010 organisms/capsule.
2. Identical formulation of inert placebo: maltodextrin

The dose of probiotic is prepared in 5 g lyophilised powder in a capsule - the placebo is a matched capsule with 5 g of maltodextrin. Dosing is daily for 21 days via the oral route. The total duration of follow-up is 8 weeks from the end of antibiotics to a maximum of 12 weeks if other courses of antibiotics are given.

Intervention Type
Supplement

Phase
Not Applicable

Drug/device/biological/vaccine name(s)
Probiotic supplementation

Primary outcome(s)
During antibiotic treatment and within 8 weeks of stopping antibiotics:
1. The occurrence of antibiotic associated diarrhoea (AAD)
2. The occurrence of C. difficile diarrhoea (CDD)

Key secondary outcome(s))
1. Severity and duration of AAD
2. Abdominal symptoms (abdominal pain, bloating, flatus, nausea)
3. Severity and duration of CDD and incidence of recurrence within the study period
4. Incidence of pseudomembranous colitis (PMC), need for colectomy, death
5. Well-being and quality of life
6. Duration of hospital stay
7. Adverse effects
8. Acceptability of the probiotic preparation
9. Viability of the probiotic at point of administration
All of these outcomes will be measured during the period from participant recruitment to 8 weeks after stopping antibiotics, to a maximum of 12 weeks from recruitment.

10. Risk factors for ADD, CDD and severe disease (PMC, colectomy, death), assessed at participant recruitment

Completion date
01/03/2011

Eligibility

Key inclusion criteria
1. People aged greater than or equal to 65 years, either sex
2. Admitted to hospital without diarrhoea
3. Have been exposed to one or more antibiotics within the last 7 days or are about to start antibiotic treatment

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Senior

Sex
All

Key exclusion criteria
1. People with known immunosuppressive disorder, prosthetic heart valve or active inflammatory bowel disease (the latter defined as requiring specific treatment in the past 12 months)
2. Acute pancreatitis (defined as abdominal pain with serum amylase or lipase concentration greater than or equal to three times the institutional upper limit of normal)
3. Jejunal tube in-situ and/or jejunal feeding (as documented in the clinical/nursing records)
4. Likely impaired splanchnic perfusion: any past or current abnormality or disease affecting the mesenteric arteries (as documented in the clinical records)
5. Severe illness requiring care in either a high dependency or intensive care unit (but not planned admission to these facilities for observation only, e.g., after cardiac surgery)
6. People with a previous history of adverse reactions to probiotics
7. Informed consent not granted by patient or their carer(s)

Date of first enrolment
01/12/2008

Date of final enrolment
01/03/2011

Locations

Countries of recruitment
United Kingdom

Wales

Study participating centre
Morriston Hospital
Swansea
United Kingdom
SA6 6NL

Sponsor information

Organisation
Swansea University (UK)

ROR
https://ror.org/053fq8t95

Funder(s)

Funder type
Government

Funder Name
Health Technology Assessment Programme

Alternative Name(s)
NIHR Health Technology Assessment Programme, Health Technology Assessment (HTA), HTA

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	12/10/2013		Yes	No
Results article	results	01/12/2013		Yes	No
Protocol article	protocol	06/05/2012		Yes	No