



UNIVERSITY OF LEEDS

This is a repository copy of *The cost-effectiveness of Docetaxel and active symptom control versus active symptom control alone for refractory oesophagogastric adenocarcinoma: Economic analysis of the COUGAR-02 trial.*

White Rose Research Online URL for this paper:
<http://eprints.whiterose.ac.uk/89992/>

Version: Accepted Version

Article:

Meads, DM, Marshall, A, Hulme, CT et al. (2 more authors) (2016) The cost-effectiveness of Docetaxel and active symptom control versus active symptom control alone for refractory oesophagogastric adenocarcinoma: Economic analysis of the COUGAR-02 trial. *PharmacoEconomics*, 34 (1). pp. 33-42. ISSN 1170-7690

<https://doi.org/10.1007/s40273-015-0324-5>

Reuse

Unless indicated otherwise, fulltext items are protected by copyright with all rights reserved. The copyright exception in section 29 of the Copyright, Designs and Patents Act 1988 allows the making of a single copy solely for the purpose of non-commercial research or private study within the limits of fair dealing. The publisher or other rights-holder may allow further reproduction and re-use of this version - refer to the White Rose Research Online record for this item. Where records identify the publisher as the copyright holder, users can verify any specific terms of use on the publisher's website.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



eprints@whiterose.ac.uk
<https://eprints.whiterose.ac.uk/>

Supplementary material

Supplementary Table 1: Unit costs – Community

Resource	Cost	Source	Notes
GP, surgery visit (face to face)	£43.00	PSSRU2012 - pg182	With qualification-lasting 11.7mins
GP, surgery visit (phone or email)	£26.00	PSSRU2012 - pg182	With qualification-lasting 7.1mins
GP, home visit	£110.00	PSSRU2012 - pg182	With qualification Per out of surgery visit lasting 23.4 minutes
District nurse (face to face)	£38.42	NHS 2011-12 reference costs - Community Nursing Services: District Nursing Services Face to face contact	CN301AF
District nurse (phone or email)	£14.24	NHS 2011-12- reference costs Community Nursing Services: District Nursing Services Non face to face contact	CN301AN
Health Visitor (face to face)	£45.82	NHS 2011-12 reference costs, PCT and Trust combined	CN403CFO
Health Visitor (non face to face)	£20.96	NHS 2011-12 reference costs, PCT and Trust combined	CN403CN
Community Occupational Therapy (face to face)	£71.24	NHS 2011-12 reference costs, PCT and Trust combined	N6A1
Community Occupational Therapy (non face to face)	£28.50	NHS 2011-12 reference costs, PCT and Trust combined	Assumed face to face cost/2.5
Community Physiotherapy Services (face to face)	£45.77	NHS 2011-12 reference costs, PCT and Trust combined	N5A1
Community Physiotherapy Services (non face to face)	£18.31	NHS 2011-12 reference costs, PCT and Trust combined	Assumed face to face cost/2.5
Social workers		Macmillan and palliative care social worker costs not found - alternatives below used	
Macmillan Nurse (face to face)	£26.00	http://www.rnoh.nhs.uk/home/news/rnoh-have-their-cake-and-eat-it-for-macmillan-cancer-support	
Macmillan Nurse (phone or email)	£10.40	http://www.rnoh.nhs.uk/home/news/rnoh-have-their-cake-and-eat-it-for-macmillan-cancer-support	Assumed face to face cost/2.5
Palliative care	£78.00	PSSRU 2012- pg190	Social work (face to face). With qualifications assuming half hour face to face contact (£156/2)

Palliative care	£31.20	PSSRU 2012 - pg190	Social work (non face to face). Assumed face to face cost/2.5
Counsellor in primary care (face to face)	£59.00	PSSRU 2012 - pg53	Per consultation
Counsellor (phone or email)	£23.60	PSSRU 2012 - pg53	Assume face to face cost /2.5
Home help or care worker	£23.00	PSSRU 2012 - pg193	Per weekday hour
Citizens advice or welfare rights advisor	£14.00	PSSRU 2012 - pg192	Assuming Same salary as Social work assistant and assuming 30 minute contact
Psychiatrist or psychologist (face to face)	£136.00	PSSRU 2012 - pg171	Per hour
Psychiatrist or psychologist (Non face to face)	£54.50	PSSRU 2012 - pg171	Assume face to face cost /2.5
Other services			
Reflexology	£35.00	http://www.cancerresearchuk.org/cancer-help/about-cancer/treatment/complementary-alternative/therapies/reflexology	
Podiatrist (for foot brace)	£41.00	PSSRU 2012 - pg170	
Health at home	£45.82	Assumed to be Health Visitor (see above)	
Hearing Aid	£172.50	http://www.bootshearingcare.com/hearing-aids/our-hearing-aid-range/products/?range=2143	Assumed cheapest (£345 over 2 years)
Practice Nurse	£26.50	PSSRU 2012 - pg180	With qualification £53 per hour, assume 30 min
Phlebotomist	£45.82	Assumed to be Health Visitor (see above)	
Upper GI Specialist Nurse	£45.50	PSSRU 2012 - pg181	Nurse advanced includes lead specialist, clinical nurse specialist, senior. (£91) per hour of client contact - assume 30 mins

Supplementary Table 2: Unit costs - Hospital

Unit cost item	Unit cost	Description	Code	Reference
Ambulance	£229.61	See and treat and convey	ASS02	AMB_SEE - Ambulance services - See
Bed days –'Hotel cost' for micro-costing	£200.00			http://www.enherts-tr.nhs.uk/files/2014/03/Item-10c-Performance-report.pdf
Bed days – for macro-costing	£339.80	Inpatient Specialist Palliative Care 19 years and over (Stay) - SD01A		NHS 2011-12 reference costs, PCT and Trust combined
A&E	£114.00	Hospital accident and emergency Services: Leading to Admitted Category 1 investigation, Category 1-2 Treatment	VB09Z	NHS 2011-12 reference costs, PCT and Trust combined
Convalescent home	£74.57	Per day based on £522 per week for residential care		PSSRU 2012 - pg 38
Nursing home	£105.14	Per day based on £736 per week for nursing home		PSSRU 2012 - pg 37
Out-patient attendance – for micro-costing	£84.00	Outpatient Attendances Medical Oncology "Non Consultant Led Outpatient Attendances - face to face first attendance	370	NHS 2011-12 reference costs
Out-patient attendance – for macro-costing	£191.37	Outpatient clinic visit	SD04A	NHS 2011-12 reference costs
Consultant Led: Follow up Attendance Non-Admitted Face to Face				
Medical - Oncology	£124.00		370	Total - HRGs
Medical - Cardiology	£122.00		320	Total - HRGs
Medical - Respiratory	£133.00		340	Total - HRGs
Medical - Surgical	£110.00		100	Total - HRGs
General medicine	£147.00		300	Total - HRGs
CT Scan - Computerised Tomography Scan, one area, pre and post contrast	£104.00		RA10Z	Total - HRGs
Radiography - MRI Scan	£145.88	Magnetic Resonance Imaging Scan, one area, no contrast, 19 years and over	RA01A	Total - HRGs
Radiography - X-ray	£34.50	Minor Therapeutic or Diagnostic General Abdominal Procedures, 19 years and over	FZ13C	Direct Access: Diagnostic Services
Radiography - Ultrasound	£50.73	Ultrasound Scan, less than 20 minutes	RA23Z	Total - HRGs
Radiography - Nuclear medicine	£238.39	Nuclear Medicine, Category 3	RA37Z	Total - HRGs
Diet or nutrition	£71.09	Dietetics Services	N800	Total - Other Currencies

Rehabilitation team	£259.44	Rehabilitation for Other Disorders	VC42Z	Total - HRGs
Endoscopy	£558.68	Therapeutic Endoscopic Upper GI Tract Procedures, 19 years and over	FZ70Z	Total - HRGs
Insertion of venous access device	£233.00		EA36A	Total - HRGs
Blood transfusion	£472.77	Single Plasma Exchange, Leucopheresis or Red Cell Exchange, with length of stay 2 days or less, 19 years and over	SA13A	Total - HRGs
Speech and Language therapist - Hospital based	£66.00	PSSRU 2011-12 pg 215		
Occupational therapist - Hospital based	£53.00	PSSRU 2011-12 pg 214		
Rehabilitation for Other Disorders	£259.00		VC42Z	Total - HRGs
Physiotherapist - Hospital based	£34.00	PSSRU 2011-12 pg 213		
Intravenous Nutrition, Band 1	£302.00		XD26Z	Total - HRGs

Supplementary Table 3: Resource use – Secondary care (Inpatient)

	DXL+ASC					ASC				
	N	Mean	SD	Min	Max	N	Mean	SD	Min	Max
In patient stays	84	1.71	1.63	0	8	84	1.06	1.28	0	7
Ambulance use	84	0.54	0.80	0	3	84	0.38	0.85	0	4
Days in hospital	84	14.45	20.25	0	125	84	7.68	9.74	0	34
No. oncology assessments	84	1.85	4.07	0	26	84	1.24	4.14	0	32
No. cardiology assessments	84	0.07	0.30	0	2	84	0.14	0.91	0	8
No. respiratory assessments	84	0.11	0.58	0	5	84	0.02	0.15	0	1
No. surgical assessments	84	0.23	0.59	0	3	84	0.07	0.26	0	1
No. CT scans	84	0.45	0.81	0	4	84	0.21	0.54	0	3
No. MRIs	84	0.06	0.24	0	1	84	0.02	0.15	0	1
No. X-Rays	84	1.01	1.73	0	9	84	0.48	0.90	0	4
No. ultrasounds	84	0.31	0.79	0	4	84	0.19	0.57	0	3
No. nuclear assessments	84	0.01	0.11	0	1	84	0.02	0.15	0	1
No. other radiography	84	0.10	0.33	0	2	84	0.04	0.19	0	1
No. social work assessments	84	0.12	0.52	0	4	84	0.05	0.21	0	1
No. psychological assessments	84	0.01	0.11	0	1	84	0.01	0.11	0	1
No. physiotherapy assessments	84	0.32	1.74	0	15	84	0.10	0.48	0	3
No. occupational therapy assessments	84	0.12	0.63	0	4	84	0.07	0.49	0	4
No. dietary assessments	84	0.42	1.16	0	7	84	0.43	2.15	0	17
No. rehabilitation assessments	84	0.02	0.22	0	2	84	0.02	0.22	0	2
No. endoscopies	84	1.26	1.42	0	6	84	0.85	1.09	0	5
No. blood transfusions	84	1.17	1.35	0	6	84	0.85	1.20	0	6

Data obtained from the Inpatient, nurse-completed, case report forms; DXL+ASC = Docetaxel and Active Symptom Control; ASC = Active Symptom Control

Formatted: Font: Not Bold

Formatted: Font: Not Bold

Supplementary Table 4: Resource use – Secondary care (Outpatient)

	DXL+ASC					ASC				
	N	Mean	SD	Min	Max	N	Mean	SD	Min	Max
Outpatient visits	84	11.07	9.36	0	44	84	5.62	5.38	0	19
Ambulance use	84	9.10	9.26	0	43	84	4.11	4.18	0	17
No. oncology assessments	84	6.93	5.55	0	27	84	4.27	4.26	0	19
No. cardiology assessments	84	0.02	0.15	0	1	84	0.02	0.15	0	1
No. respiratory assessments	84	0.12	0.52	0	4	84	0.02	0.15	0	1
No. surgical assessments	84	0.06	0.28	0	2	84	0.04	0.19	0	1
No. CT scans	84	1.32	1.47	0	7	84	0.32	0.89	0	6
No. MRIs	84	0.04	0.19	0	1	84	0.04	0.24	0	2
No. X-Rays	84	0.18	0.52	0	3	84	0.17	0.53	0	3
No. ultrasounds	84	0.07	0.26	0	1	84	0.08	0.32	0	2
No. nuclear assessments	84	0.02	0.15	0	1	84	0.06	0.28	0	2
No. other radiography	84	0.14	0.64	0	5	84	0.06	0.55	0	5
No. social work assessments	84	0.13	0.60	0	4	84	0.04	0.19	0	1
No. psychiatric assessments	84	0.00	0.00	0	0	84	0.02	0.22	0	2
No. physiotherapy assessments	84	0.13	1.20	0	11	84	0.02	0.22	0	2
No. occupational therapy assessments	84	0.01	0.11	0	1	84	0.04	0.24	0	2
No. dietary assessments	84	0.51	1.11	0	5	84	0.30	0.82	0	4
No. rehabilitation assessments	84	0.00	0.00	0	0	84	0.02	0.22	0	2

DXL+ASC = Docetaxel and Active Symptom Control; ASC = Active Symptom Control; SD = Standard deviation; Min = Minimum; Max = Maximum; Laboratory tests are excluded as are therapy sessions as in most cases these were '0'; Data obtained from the outpatient case record-report form

Formatted: Font: Not Bold

Supplementary Table 5: Resource use – Primary care

	DXL+ASC					ASC				
	N	Mean	SD	Min	Max	N	Mean	SD	Min	Max
GP Surgery visits	84	1.12	2.14	0	9	84	0.87	1.17	0	5
GP Surgery tel. calls	84	0.45	1.05	0	6	84	0.48	1.57	0	12
GP home visits	84	0.62	1.52	0	8	84	0.35	0.78	0	3
GP home tel. calls	84	0.11	0.58	0	5	84	0.18	0.85	0	6
District nurse visits	84	2.54	10.12	0	84	84	0.67	1.77	0	12
District nurse tel. calls	84	0.20	0.58	0	3	84	0.11	0.44	0	3
Health visitor visits	84	0.05	0.34	0	3	84	0.02	0.15	0	1
Health visitor tel. calls	84	0.02	0.22	0	2	84	0.00	0.00	0	0
Occupational nurse visits	84	0.08	0.42	0	3	84	0.00	0.00	0	0
Occupational nurse tel. calls	84	0.04	0.24	0	2	84	0.00	0.00	0	0
Physiotherapist visits	84	0.02	0.22	0	2	84	0.02	0.22	0	2
Physiotherapist tel. calls	84	0.04	0.33	0	3	84	0.00	0.00	0	0
MacMillan nurse visits	84	1.08	2.07	0	15	84	0.44	1.10	0	7
MacMillan nurse tel. calls	84	0.80	1.86	0	12	84	0.40	1.12	0	7
Palliative nurse visits	84	0.40	1.20	0	7	84	0.21	1.09	0	9
Palliative nurse tel. calls	84	0.15	0.57	0	4	84	0.27	0.91	0	5
Counsellor visits	84	0.07	0.49	0	4	84	0.04	0.19	0	1
Counsellor tel. calls	84	0.01	0.11	0	1	84	0.05	0.44	0	4
Home help visits	84	1.21	9.26	0	84	84	0.51	3.30	0	22
Home help tel. calls	84	0.00	0.00	0	0	84	0.00	0.00	0	0
Citizen's Advice visits	84	0.05	0.26	0	2	84	0.02	0.15	0	1
Citizen's Advice tel. calls	84	0.02	0.15	0	1	84	0.01	0.11	0	1
A&E visits	84	0.13	0.43	0	3	84	0.01	0.11	0	1
A&E tel. calls	84	0.23	0.55	0	2	84	0.18	0.71	0	5

DXL+ASC = Docetaxel and Active Symptom Control; ASC = Active Symptom Control; SD = Standard deviation; Min = Minimum; Max = Maximum; Data obtained from patient-completed questionnaires

Formatted: Font: Not Bold

Supplementary Table 6: EQ-5D values

Week	DXL+ASC QALY			ASC QALY		
	N	Mean	SE	N	Mean	SE
0	79	0.69	0.03	78	0.70	0.03
3	63	0.70	0.03	49	0.63	0.04
6	52	0.72	0.03	37	0.58	0.04
9	44	0.72	0.04	27	0.66	0.04
12	31	0.68	0.06	23	0.68	0.05
15	25	0.73	0.04	17	0.62	0.08
18	22	0.67	0.05	11	0.68	0.08
24	15	0.59	0.07	12	0.74	0.05
30	13	0.60	0.09	8	0.50	0.13
36	13	0.69	0.08	5	0.65	0.15
42	8	0.66	0.08	4	0.53	0.18
48	4	0.61	0.13	1	0.09	=
54	6	0.71	0.13	3	0.57	0.17
60	0	=	=	1	0.69	=

DXL+ASC = Docetaxel and Active Symptom Control; ASC = Active Symptom Control; QALY = Quality-adjusted Life Year; SE = Standard Error

Formatted: Font: Not Bold

Supplementary Table 7: Net Monetary Benefit regression results ($\lambda = \text{£}30,000$)

Predictor variable	Model 1 (Treatment)	Model 2 (Treatment+ Demographics)	Model 3 (Treatment+ clinical)	Model 4 (Optimal + interactions)
	β	β	β	β
DXL+ASC (vs. ASC)	326.55	279.12	-142.20	-5259.34
Male (vs. female)		-1560.52		
Age		37.54		
Time to diagnosis (Years)			1.177	
ECOG baseline status (vs. 0)				
	1		-5545.34**	-5520.45**
	2		-8090.41**	-8468.47**
Metastatic disease (vs. locally advanced)			-881.06	
Disease site (vs. Oesophagus)				
Stomach			1358.58	
Oesophagus-Gastric junction			-762.48	
Time to progression (vs. during 1 st line treatment)				
Within 3 months of 1 st line treatment			-13.66	
3-6 months after 1 st line treatment			-1335.06	
Previous Surgery (vs. none)			3425.95	2804.05
Previous chemotherapy (vs. Cisplatin + 5FU)				
Epirubicin + Cisplatin+ 5FU			3239.30	
Epirubicin + Cisplatin + Capecitabine			-114.55	
Epirubicin + Capecitabine + Oxaliplatin			1772.81	
Other			8.61	
Previous Radiotherapy (vs. no)			-4099.54	-2583.65
Interactions:				
Treatment arm x Gender (vs. ASC & Female)				
ASC & Male				5948.86*
DXL+ASC & Male				-7081.11*
Treatment arm x tumour (vs. ASC & locally advanced)				
ASC & Metastatic disease				-8191.27**
DXL+ASC & Metastatic disease				12665.83**
Constant	-595.55	-1068.12	3242.13	5854.96
N	168	168	168	168

<u>F</u>	<u>0.05</u>	<u>0.38</u>	<u>1.91*</u>	<u>4.69**</u>
<u>R²</u>	<u>0.0003</u>	<u>0.0070</u>	<u>0.159</u>	<u>0.211</u>

*p<0.05; **p<0.01; **DXL+ASC = Docetaxel and Active Symptom Control; ASC = Active Symptom Control; λ = Lambda/Willingness to pay threshold**

Formatted: Font: +Body (Calibri)