Memorial Sloan Kettering
Cancer Center

Patient-Reported Outcomes from the ECD Registry

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Overview

- Structure of ECD Registry
- Enrollment
- ECD Symptom Scale, findings
- Quality of life and other Patient-Reported Outcomes (PROs)

ECD Registry Study

- Longitudinal observational study of ECD patients
- Clinical/Radiologic/Pathologic data
- Patient-reported outcomes (PRO) data
- Housed at MSK, although any patient can enroll
- Mirrored at Newcastle University (UK)—regulatory approval May 2019

ECD Registry Study Objectives

- Collect high-quality comprehensive longitudinal data about ECD patients
- Clinical, radiologic, pathologic, mutation
- Response to treatment
- Resource to the entire ECD clinical and research community
- Patient-centered: symptoms, quality of life, supportive care needs
- Reported by patients themselves

Biopsy and gene testing (optional)

- Optional
- Slide review, MSK-IMPACT available on paraffin embedded tissue (detailed gene testing)
- test for BRAFV600E on cell-free DNA from blood
- ~120 gene test on cell-free DNA from blood available when clinically applicable
- Free, telephone consent, generates a clinical report

Patient-Reported Outcomes

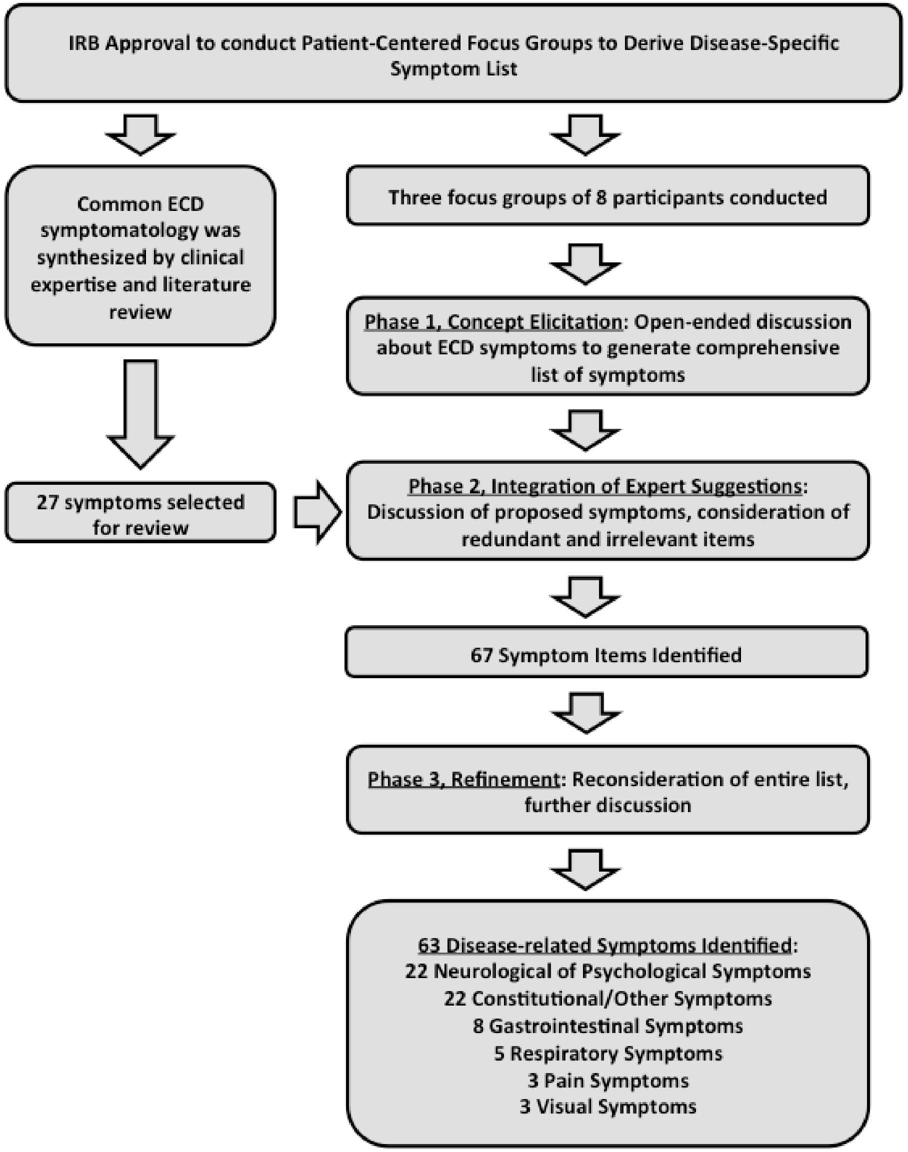
- Goal: capture systematic and high-quality data about how ECD patients live
- How do treatments effect symptoms, quality of life, overall all-being
- How can we make our interventions more responsive to patients and families
- For rare diseases, PROs can become a critical component of assessing response to treatment

PRO Assessments

- ECD Symptom Scale (ECD-SS)
- Quality of life (FACT-G)
- Pain (Brief Pain Inventory)
- Fatigue (Brief Fatigue Inventory)
- Anxiety, Depression (Hospital Anxiety and Depression Scale)
- Supportive care needs (SCNS)
- Side effects of treatment (PRO-CTCAE)
- Activities of daily living (IADL)

- Collected at multiple timepoints

ECD-SS



IRB Approval to conduct Patient-Centered Focus Groups to Derive Disease-Specific Symptom List

Common ECD symptomatology was synthesized by clinical expertise and literature review

27 symptoms selected for review

Three focus groups of 8 participants conducted

Phase 1, Concept Elicitation: Open-ended discussion about ECD symptoms to generate comprehensive list of symptoms

Phase 2, Integration of Expert Suggestions: Discussion of proposed symptoms, consideration of redundant and irrelevant items

67 Symptom Items Identified

Phase 3, Refinement: Reconsideration of entire list, further discussion

63 Disease-related Symptoms Identified:
22 Neurological of Psychological Symptoms
22 Constitutional/Other Symptoms
8 Gastrointestinal Symptoms
5 Respiratory Symptoms
3 Pain Symptoms
3 Visual Symptoms

- All disease symptoms are checked on a list
- 5 most severe are designated as such and ranked
- For each
  - Severity scored 0-10
  - Frequency (categories)
- Accounts for different ECD manifestations

Preliminary Results

- 143 patients enrolled
- ~125 completed survey batteries, ~60 follow-up
- Presented here are first 103 complete enrollment assessments
- Median age , range
- 61 (59%) men
- 96 (93%) white
- 44 (43%) treated at MSK
- 29 (47%) employed, 17 (27%) unemployed, 17 (27% retired), 41 not reported.

Results: 103 Registry Participants

Disease location	N	%
Bone	43	70
Skin	9	9
Brain	32	31
Lungs	11	11
Heart	16	16
Kidneys	25	24
Eyes	12	12
Spine	11	11
Other	14	14

Treatment	N	%
BRAF inhibitory therapy	32	31
MEK inhibitor therapy	21	20
Combined BRAF/MEK therapy	8	8
Interferon	3	3
Anakinra	2	2
Other immunosuppression	10	10
Combined MEK/immunosuppression	2	2
No treatment	21	20
Unknown/not answered	2	2

Treatment	N	%
Targeted therapy	63	61
Conventional therapy	15	15
Combination targeted/conventional	2	2
No treatment	21	20
Unknown/not answered	2	2

Symptom Frequency

Neurologic or Psychological Symptoms	N	%
Stress/anxiety	54	52
Memory problems (forgetfulness, repeating questions or statements)	53	51
Trouble with balance or walking	50	49
Depression or sadness	46	45
Discouragement	39	38
Short tempered	38	37
Weakness of the arms or legs	37	36
Difficulty concentrating or paying attention	35	34
Mood swings	32	31
Numbness or tingling in hands or feet	32	31
Trouble with dexterity/coordination	31	30
Ringing in the ears (tinnitus)	28	27
Dizziness	27	26
Speech difficulties	26	25
Head rush or light headedness or spinning sensation (vertigo)	26	25
Choking (while eating or drinking)	22	21
Difficulty swallowing	18	17
Headache	17	17
Inappropriate crying	10	10
Personality changes	8	8
Inappropriate behavior	7	7
Inappropriate laughter	6	6

Symptom Frequency

Constitutional or Other Symptoms	N	%
Fatigue or sleepiness	71	69
Decreased sexual interest	34	33
Frequent napping	32	31
Sudden urge to urinate	29	28
Insomnia or difficulty sleeping	28	27
Itchy skin	26	25
Inability to sleep due to pain	21	20
Rash or skin problems	20	19
Swelling of the arms or legs (edema)	19	18
Hot flashes	18	17
Night sweats	17	17
Inability to drive	16	16
Changes in smell	12	12
Inability to sleep lying down	11	11
Problems tasting food	11	11
Other problem that was not listed or I do not have any symptoms.	10	10
Hyperhidrosis (excessive sweating)	9	9
Urinary incontinence	8	8
Pounding or racing heart (palpitations)	7	7
Urinary tract pain	6	6
Fever	5	5

Symptom Frequency

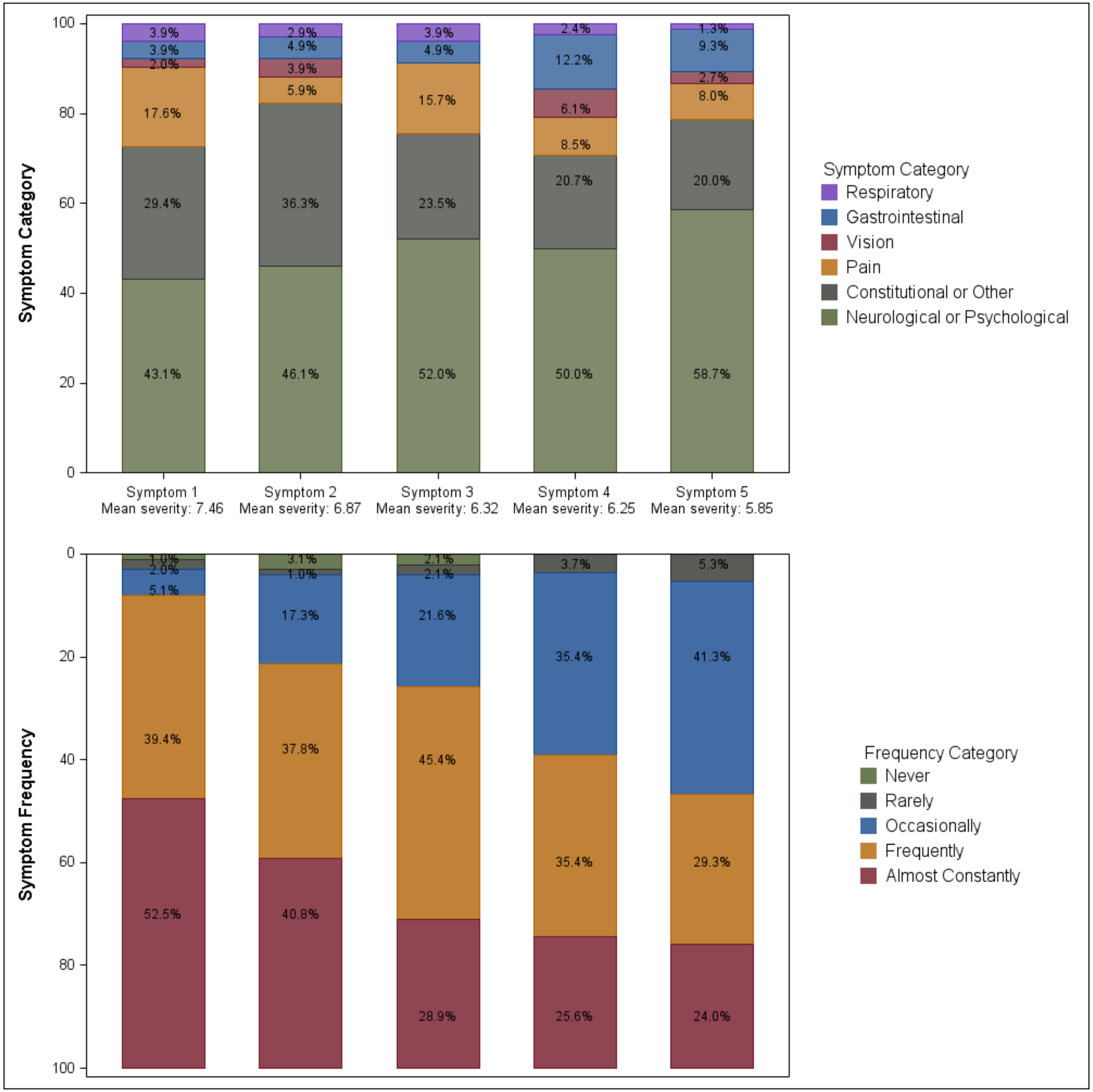
Gastrointestinal Symptoms	N	%
Dry mouth	34	33
Frequent or excessive urination	34	33
Diarrhea	26	25
Nausea	20	19
Abdominal Pain	19	18
Decreased appetite	19	18
Dental problems	11	11
Vomiting	5	5
Ulcers or other stomach problems	4	4

Pain Symptoms	N	%
Aching bones or joints	58	56
Pain	45	44
Aching muscles	33	32

Visual Symptoms	N	%
Changes in vision	26	25
Blurred vision	22	21
Double vision	15	15

Respiratory Symptoms	N	%
Shortness of breath (in general)	24	23
Cough	21	20
Trouble breathing at night	10	10
Trouble breathing/shortness of breath (in general)	10	10
Hypoxia (low oxygen)	3	3

Symptoms, Severity, Frequency



Symptom	Mean	SD
Symptom 1	7.46	1.98
Symptom 2	6.87	2.30
Symptom 3	6.32	2.47
Symptom 4	6.25	2.16
Symptom 5	5.85	2.44
Total Score	33.39	8.69
Pain (BPI)	5.10	1.88
Fatigue (BFI)	5.31	2.34

Mood, Quality of life, Daily Function

Total Depression Score	N	%
0-7 (Normal)	64	63
8-10 (Mild)	13	13
11-14 (Moderate)	18	18
15+ (Severe)	6	6

Total Anxiety Score	N	%
0-7 (Normal)	65	64
8-10 (Mild)	19	19
11-14 (Moderate)	14	14
15+ (Severe)	3	3

Functional Impairment	N	%
Telephone	1	1
Shopping	47	46
Food Prep	39	38
Housekeeping	10	10
Laundry	19	18
Transportation	23	22
Medication	11	11
Finances	7	7

Quality of Life Domain	Average Score	Total Score Standard Deviation	Score Range
Physical Well-Being	18.47	6.68	0.00-28.00
Social/Family Well-Being	18.62	6.68	0.00-28.00
Emotional Well-Being	16.31	4.45	0.00-24.00
Functional Well-Being	15.07	7.00	0.00-28.00
Total	67.24	19.92	**0.00-108.00**

- 37% have depressed mood
- 36% have anxiety
- Average overall quality of life is comparable to a cancer patient spending 50% of time in bed
- QOL impairments across physician and psychological domains
- Some impairments of daily function

Unmet Supportive Care Needs

Domain of Supportive Care Need	N	(%)
Lack of energy/tiredness	72	70
Not being able to do things you used to do	69	67
Uncertainty about the future	66	64
Learning to feel in control of your situation	62	60
Concerns about the worries of those close to you	62	60
Work around the home	56	54
Worry that the results of treatment are beyond your control	55	53
Fears about the cancer spreading	52	50
Feeling unwell a lot of the time	50	49
Pain	48	47
Anxiety	48	47
Feeling down or depressed	48	47
Feelings of sadness	48	47
Keeping a positive outlook	47	46
Being informed about things you can do to help yourself get well	45	44
Changes in sexual feelings	44	43
Feelings about death and dying	40	39
Changes in your sexual relationships	39	38
Having access to professional counseling if you, family, or friends need it	36	35
Having one member of hospital staff with whom you can talk to about all aspects of your condition, treatment, and follow up	34	33
Being treated like a person not just another case	33	32
Being given explanations of those tests for which you would like explanations	31	30
Being informed about cancer which is under control or diminishing (that is, remission)	31	30
Being given written information about the important aspects of your care	30	29
Being treated in a hospital or clinic that is as physically pleasant as possible	30	29
Being adequately informed about the benefits and side-effects of treatments before you choose to have them	29	28
Being informed about your test results as soon as feasible	29	28
Hospital staff acknowledging, and showing sensitivity to, your feelings and emotional needs	28	27
More choice about which hospital you attend	27	26
Reassurance by medical staff that the way you feel is normal	27	26
Being given imformation about aspects of managing your illness and side effects at home	27	26
Being given information about sexual relationships	26	25
More choice about which cancer specialists you see	25	24
Hospital staff attending promptly to your physical needs	22	21

Conclusions

- PRO assessment in ECD reveals previously unappreciated, although not surprising, symptoms
- Significant burden of neurologic and psychologic symptoms, unmet supportive care needs, diminished quality of life, great efforts to maintain function
- *Treated* patients
- Next: identification of predictors of better worse outcomes
- Potential for incorporation of PROs into clinical care, and therapeutic trials for patient-centered response assessment

Conclusions

- Registry is meant to be responsive to you
- Supported by you!
- Participation across the ECD community is vital
- International participation is complicated but possibler

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Thanks


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ERDHEIM-CHESTER DISEASE GLOBAL ALLIANCE

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