Supplementary Material

# Supplementary Data

Supplementary Table 1. Electronic Database Search Terms

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| PubMed (via pubmed.gov) |
| **Search No.** | **Type of Term** | **Search String** |
| 1 | Disease terms | ("essential tremor"[Mesh] OR ("essential tremor"[Title/Abstract] OR "kinetic tremor"[Title/Abstract] OR "benign essential tremor"[Title/Abstract] OR "familial tremor"[Title/Abstract] OR "hereditary essential tremor"[Title/Abstract])) |
| 2 | Publication type limits | "Comment"[pt] OR "Editorial"[pt] OR "Letter"[pt] OR "News"[pt] OR "Published Erratum"[pt] OR "Retraction of Publication"[pt] OR "Case Reports"[pt] OR "Biography"[pt] OR "Expression of Concern"[pt] OR "Patient Education Handout"[pt] OR "Directory"[pt] OR "Newspaper Article"[pt] OR "Historical Article"[pt] OR "Retracted Publication"[pt] OR commentary[ti] OR editorial[ti] OR "letter to editor"[ti] OR erratum[ti] OR correction[ti] OR congresses as topic [mesh] OR (animals[mh] not (animals[mh] and humans[mh])) |
| **Embase (via embase.com)** |
| **Search No.** | **Type of Term** | **Search String** |
| 1 | Disease terms | 'essential tremor'/exp OR 'essential tremor':ti,ab OR 'kinetic tremor':ti,ab OR 'benign essential tremor':ti,ab OR 'familial tremor':ti,ab OR 'hereditary essential tremor':ti,ab |
| 2 | Publication type limits | 'editorial'/exp OR 'book'/exp OR 'erratum'/exp OR 'letter'/exp OR 'note'/exp OR 'conference paper'/exp OR 'in vitro study'/exp OR 'in vivo study'/exp OR 'cell culture'/exp OR 'cell line'/exp OR 'mathematical model'/exp OR 'theoretical model'/exp OR 'feasibility study'/exp OR 'pilot study'/exp OR [editorial]/lim OR [erratum]/lim OR [letter]/lim OR [note]/lim OR ('animal'/exp NOT ('animal'/exp AND 'human'/exp)) |
| **CENTRAL and CDSR (via Cochrane Library)** |
| **Search No.** | **Type of Term** | **Search String** |
| 1 | Disease terms | MeSH descriptor: [Essential Tremor] explode all trees OR ("essential tremor" OR "kinetic tremor" OR "benign essential tremor" OR "familial tremor" OR "hereditary essential tremor"):ti,ab,kw |

Supplementary Table 2. Study Eligibility Criteria

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| Parameter | Inclusion Criteria | Exclusion Criteria |
| Population | Adult patients diagnosed with ET, not restricted by age of onset so including familial ET | Other movement disorders or neurodegenerative diseasesStudies with mix of movement disorder patients, but not reporting data for ET patients separately |
| Intervention/Comparator | None  | None |
| Outcomes | Outcomes measured using structured instruments/questionnaires for the assessment of outcome categories: gait, balance, and falls, cognitive impairment, depression and anxiety, sleep disturbances and fatigue, impact on activities of daily living, impact on health-related quality of life, and psychosocial impact  | Epidemiology, efficacy and safety of treatments, healthcare resource use and outcomes, treatment patterns |
| Study Design | Observational, non-randomized studies such as claims analysis, registry studies, electronic medical chart review | Preclinical studies, genetic models, animal studies, case reports, case studies, randomized controlled trials, economic evaluations |

Supplementary Table 3. Summary of Study and Patient Characteristics of Included Publications

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| First Author, Year | Study Country | Data Source | Study Population | Sample Size | Age - Mean (SD)*(in years)* | Age of Onset - Mean (SD)*(in years)* | Disease Duration - Mean (SD)*(in years)* | Disease Severity - Mean (SD) | Disease Severity Criteria | Family History of ET |
| Acar, 2019 (1) | Turkey | Hospital Cohort | Controls | 38 | 33.2 (10.1) | N/A | N/A | N/A | N/A | NR |
| ET patients | 40 | 33.6 (12.2) | NR | NR | NR | NR | NR |
| Cersonsky, 2019 (a) (2) | US | COGNET | ET patients | 98 | 80.5 (9.0) | N/A | 41.6 (22.8) | 20.7 (5.6) | WHIGETTRS | NR |
| US | COGNET | ET caregivers | 98 | 71.0 (11.8) | N/A | N/A | N/A | N/A | NR |
| Cersonsky, 2019 (b) (3) | US | COGNET | ET patients | 60 | 70.2 (6.8) | NR | 37.2 (18.9) | 19.4 (4.3) | WHIGETTRS | NR |
| Chandran, 2013 (4) | India | Hospital Cohort | ET patients | 50 | 40.7 (16.2) | 32.2 (18.9) | 8.4 (10.0) | 16.8 (8.7) | Modified FTMTRS | 58.0% |
| Chandran, 2012(5) | India | Hospital Cohort | ET patients | 50 | 40.7 (16.2) | 32.2 (18.9) | 8.4 (10.0) | 26.6 (16.2) | FTMTRS | 58.0% |
| India | Hospital Cohort | Controls | 50 | 42.3 (15.3) | N/A | N/A | N/A | N/A | 0.0% |
| Cinar, 2013 (6) | Turkey | Hospital Cohort | ET patients | 90 | 61.4 (17) | NR | 6.7 (4.5) | 22.3 (14) | FTMTRS | NR |
| Controls | 50 | 60.9 (15) | N/A | N/A | N/A | N/A | NR |
| Guiterrez, 2016 (7) | US | ETCBR | ET patients | 164 | 83.3 (5.6) | 42.6 (23.0) | 40.7 (22.5) | NR | NR | 25.6% |
| Huang, 2019 (8) | China | Hospital Cohort | ET patients | 245 | 53.3 (16.4) | 43.4 (17.8) | 9.87 (9.74) | NR | NR | 42.0% |
| Huang, 2020 (9) | China | Hospital Cohort | ET patients | 290 | 53.74 (15.78) | 43.93 (17.15) | 9.77 (9.53) | NR | NR | 58.30% |
| Huey, 2018 (10) | US | COGNET | ET patients | 233 | 79.0 (9.5) | NR | NR | 23.9 (5.6) | WHIGETTRS | NR |
| Kellner, 2017 (11) | US | COGNET | ET patients | 57 | 77.2 (10.2) | 40.9 (22.0) | 36.2 (21.6) | 23.1 (5.6) | WHIGETTRS | NR |
| US | COGNET | ET caregivers | 57 | 66.6 (12.7) | N/A | N/A | N/A | N/A | 31.4% |
| Kudrevatykh, 2020 (12) | Russia | Hospital Cohort | ET patients | 55 | 71 (45-90)\* | NR | 7 (1-50)\* | 8.0 (2.0-23.0)\* | TETRAS | NR |
| Lacerte, 2014 (13) | Canada | Survey | ET patients | 46 | 57.2 (19.5) | 31.5 (22.6) | 24.9 (19.1) | NR | NR | NR |
| Lee, 2015 (14) | South Korea | Hospital Cohort | ET patients | 60 | 52.5 (16.9) | NR | 10.1 (8.2) | NR | NR | NR |
| Korea | Hospital Cohort | Controls | 22 | 65.9 (17.5) | N/A | N/A | N/A | N/A | NR |
| Lorenz, 2011 (15) | Germany | Hospital Cohort | ET patients -- Outpatient Cohort | 107 | 63.1 (15.8) | 32.7 (20.7) | 27.6 (18.7) | 24.7 (13.4) | FTMTRS | 61.7% |
| Germany | Hospital Cohort | ET patients -- Community-based cohort | 90 | 72.1 (6.4) | 56.3 (16.1) | 16.3 (13.8) | 18.5 (9.3) | FTMTRS | 46.7% |
| Louis, 2010 (a) (16) | Spain | NEDICES | ET patients | 135 | 73.6 (6.3) | 63.5 (13.9) | NR | NR | NR | 40.0% |
| Spain | NEDICES | Controls | 2184 | 72.4 (5.8) | N/A | N/A | N/A | N/A | NR |
| Louis, 2010 (b) (17) | Spain | NEDICES | ET patients | 208 | 75.1 (6.9) | NR | 9.6 (11.4) | NR | NR | NR |
| Spain | NEDICES | Controls | 3616 | 73.5 (6.4) | N/A | N/A | N/A | N/A | NR |
| Louis, 2012 (a) (18) | US | CMUC Cohort | ET patients – Minimal depressive symptoms | 41 | 73.1 (11.1) | NR | 30.6 (17.6) | 21.9 (6.0) | WHIGETTRS | NR |
| ET patients – Moderate depressive symptoms | 24 | 66.8 (16.1) | NR | 36.0 (18.2) | 20.7 (5.3) | WHIGETTRS | NR |
| ET patients – Severe depressive symptoms | 5 | 75.0 (10.1) | NR | 25.2 (11.1) | 18.8 (3.8) | WHIGETTRS | NR |
| Louis, 2012 (b) (19) | US | CMUC Cohort | ET patients | 79 | 70.8 (13.4) | NR | NR | NR | NR | NR |
| Controls | 80 | 70.8 (9.6) | N/A | N/A | N/A | N/A | NR |
| Louis, 2012 (c) (20) | US | CMUC Cohort | ET patients | 59 | 71.2 (14.6) | 38.1 (20.6) | 33.2 (18.0) | 20.7 (5.0) | WHIGETTRS | 62.7% |
| Controls | 82 | 71.6 (10.8) | N/A | N/A | N/A | N/A | NR |
| Louis, 2012 (d) (21) | US | CMUC Cohort | ET patients | 161 | 83.9 (5.7) | 42.1 (22.7) | 41.6 (21.9) | 24.7 (7.5) | CIRS | NR |
| Louis, 2013 (22) | US | CMUC Cohort | ET patients | 335 | 68.4 (14.5) | 44.5 (22.7) | 23.9 (18.8) | 19.6 (6.9) | WHIGETTRS | NR |
| Louis, 2015 (23) | US | CMUC Cohort | ET patients | 103 | 69.7 (12.3) | 39.1 (19.3) | 30.9 (17.3) | 20.5 (5.6) | WHIGETTRS | 28.2% |
| Louis, 2016 (a) (24) | US | CMUC Cohort | ET patients | 121 | 69.9 (12.6) | 38.2 (19.5) | 31.7 (18.3) | 20.8 (59.6) | WHIGETTRS | 28.1% |
| Louis, 2016 (b) (25) | US | COGNET | ET patients | 100 | 80.5 (8.1) | 39.1 (21.2) | NR | 21.5 (5.8) | WHIGETTRS | 50.0% |
| Louis, 2016 (c) (26) | US | CMUC Cohort | ET patients | 91 | 70.4 (12.8) | 37.7 (18.1) | 36.9 (18.7) | 20.6 (5.9) | WHIGETTRS | 30.8% |
| Manorenj, 2019 (27) | India | Hospital Cohort | ET patients | 45 | 44.0 (15.0) | 40.6 (15.4) | 6 (2.81) | 18.66 (9.67) | TETRAS | 35.0% |
| Monin, 2017 (28) | US | COGNET | ET patients | 50 | 76.8 (10.6) | 42.1 (22.1) | 34.7 (21.0) | 20.5 (5.6) | WHIGETTRS | 46.0% |
| Close others | 50 | 65.4 (12.5) | N/A | N/A | N/A | N/A | NR |
| Morgan, 2017 (29) | US | COGNET | ET patients | 55 | 76.9 (10.1) | 41.4 (22.3) | 35.5 (21.5) | 23.1 (5.5) | WHIGETTRS | NR |
| ET caregivers | 55 | 66.6 (12.7) | N/A | N/A | N/A | N/A | 28.2% |
| Musacchio, 2016 (30) | Germany | Hospital Cohort | ET patients | 110 | 65.2 (14.1) | 41.4 (21.0) | 23.8 (16.4) | 36.8 (14.6) | FTMTRS | 74.5% |
| Peng, 2020 (31) | China | Hospital Cohort | ET patients | 199 | 56.17 (14.464) | 43.24 (15.461) | 12.93 (7.680) | 26.79 (16.075) | FTMTRS | 56.28% |
| Rao, 2011 (32) | US | CMUC Cohort | ET patients | 104 | 86.0 (4.6) | 43.3 (23.6) | NR | NR | NR | NR |
| Controls | 40 | 84.1 (4.2) | N/A | N/A | N/A | N/A | NR |
| Rao, 2014 (33) | US | CMUC Cohort | ET patients -- Low Cognition | 63 | 84.9 (5.7) | 43.3 (23.4) | NR | NR | NR | NR |
| ET patients-- High Cognition | 69 | 82.5 (5.6) | 40.1 (21.8) | NR | NR | NR | NR |
| Controls | 48 | 79.5 (6.7) | N/A | N/A | N/A | N/A | NR |
| Rohl, 2016 (34) | US | COGNET | ET patients -- Normal Cognition | 67 | 79.9 (9.1) | NR | 35.6 (20.4) | 21.2 (5.9) | WHIGETTRS | NR |
| ET patients -- Mild Cognitive Impairment | 16 | 84.5 (7.0) | NR | 38.8 (22.4) | 21.3 (6.4) | WHIGETTRS | NR |
| ET patients -- Dementia | 13 | 87.2 (6.4) | NR | 48.8 (25.3) | 25.2 (8.1) | WHIGETTRS | NR |
| Sengul, 2015 (35) | Turkey | Hospital Cohort | ET patients | 45 | 24.6 (7.2) | NR | 4.36 (3.94) | 10.2 (4.2) | FTMTRS | 22.2% |
| Turkey | Controls | 35 | 24.8 (5.4) | N/A | N/A | N/A | N/A | NR |
| Sengul, 2020 (36) | Turkey | Hospital Cohort | ET patients | 100 | 43.5 (20.4) | NR | 9.6 (11.0) | 23.3 (12.5) | FTMTRS | 68.0% |
| Controls | 100 | 40.8 (11.3) | N/A | N/A | N/A | N/A | NR |
| Shalash, 2019 (37) | Egypt | Hospital Cohort | ET patients | 30 | 45.20 (18.10) | 34.73 (16.56) | 10.40 (7.86) | 42.10 (13.80) | FTMTRS | 42.50% |
| Controls | 30 | 43.43 (17.27) | N/A | N/A | N/A | N/A | NR |
| Smeltere, 2017 (38) | Latvia | Hospital Cohort | ET patients | 40 | 52.1 (20.2) | NR | NR | 29.0 (20.1) | FTMTRS | NR |
| Controls | 39 | 55.9 (16.4) | N/A | N/A | N/A | N/A | NR |
| Zubair, 2018 (39) | US | COGNET | ET patients | 141 | 81.1 (8.8) | 40.5 (23.0) | NR | 21.1 (6.0) | WHIGETTRS | NR |

\*Data reported as median (range)

**Abbreviations:** CIRS = Cumulative Illness Rating Scale; COGNET = Clinical Pathological Study of Cognitive Impairment in Essential Tremor; CMUC Cohort = Clinical Epidemiological Research Study at Columbia University Medical Center; ET = Essential tremor; ETCBR = Essential Tremor Centralized Brain Repository Future Donors; FTMTRS = Fahn-Tolosa-Marin Tremor Rating Scale; N/A = Not applicable; NEDICES = Neurological Disorder of Central Spain Epidemiological Study; NR = Not reported; SD = Standard deviation; TETRAS = The Essential Tremor Rating Assessment Scale; US = United States; WHIGETTRS = Washington Heights-Inwood Genetic Study of ET Tremor Rating Scale

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