# **Supplementary materials**

**Estimation of the Incidence of Urachal Cancer: A Systematic Review and Meta-Analysis of Registry-Based Studies**

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**Supplementary Figure 1.** Flow chart of the process of paper selection.



**Supplementary Figure 2**. PRISMA flow chart with studies used for the present systematic review.

**Supplementary Table 1.** Studies included the present systemic review. BC: bladder caner, UrC: urachal carcinoma.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   | **Study** | **UrC patients** | **Authors** | **Published** | **Occurrence** | **Incidence** | **Database** | **Period** | **Period**  | **Habitants** | **Risk of Bias** | **Analysis** |
|   | Country | number of UrC patients |  | PMID | UrC/BC ratio | estimated for 100.000 year-persons | Registry- or population-based studies | range | years | estimated during the study period | Joanna Briggs Institute checklist | Included for incidence analysis | Descriptive (based on clinical data) |
| 1. | Ireland | 26 | *Collins et al.* | 27746878 | 0.3% | 0.033 | National Cancer Registry in Ireland | 1994-2011 | 18 | 4.4M | Included | yes | yes |
| 2. | Netherlands | 152 | *Bruins et al.* | 22901574 | 0.2% | 0.046 | Netherlands Cancer Registry | 1989-2009 | 21 | 15.7M | Included | yes | yes |
| 3. | Germany | 154 | *Hager et al.* | 32784300 | 0.2% | 0.038 | Robert Koch Institute | 2011-2015 | 5 | 81.3M | Included | yes | yes |
| 4. | Canada | 62 | *Pinthus et al.* | 16697798 | < 0.1% | 0.022 | Ontario Cancer Registry | 1976-2002 | 27 | 10.3M | Included | yes | no |
| 5. | Japan | 456 | *Nagumo et al.* | 31793080 | 0.4% | 0.060 | Hospital-based cancer registry (University of Tsukuba) | 2008-09 / 2012-2015 | 2 / 4 | 127.5M | Included | yes | yes |
| 6. | USA | 841 | *Dursun et al.* | 35509235 | no data | 0.030 | The National Cancer Database  | 2004-2016 | 13 | 216.1M | Included | yes | yes |
| 7. | Germany | 121 | *Darr et al.*  | <https://doi.org/10.1200/JCO.2023.41.6_suppl.480> | no data | 0.056 | NRW Cancer Registry  | 2008-2019 | 12 | 18M | Included | no | no |
| 8. | USA | 315 | *Benjamin et al.*  | <https://doi.org/10.1016/j.annonc.2022.07.1844> | no data | 0.029 | California Cancer Registry  | 1988-2019 | 32 | 33.97M | Included | no | no |
| 9. | USA | 841 | *Limonnik et al.* | 36069175 | 0.15% | 0.030 | The National Cancer Database | 2004-2016 | 13 | 216.1M | Included | no | yes |
| 10. | USA | 501 | *Ding et al.* | 35719613 | no data | 0.014 | SEER | 1975-2018 | 44 | 79.8M | Included | no | no |
| 11. | USA | 618 | *Yu et al.*  | 34595114 | no data | 0.016 | SEER | 1975-2018 | 44 | 85.5M | Included | no | no |
| 12. | USA | 420 | *Mylonas et al.* | 27592530 | no data | 0.021 | SEER | 1988-2012 | 25 | 81.1M | Included | no | no |
| 13. | USA | 392 | *Flammia et al.* | https://doi.org/10.1097/JU.0000000000002603.07 | no data | 0.033 | SEER | 2004-2016 | 13 | 92.6M | Included | no | no |
| 14. | USA | 226 | *Luzzago et al.* | 31960108 | no data | 0.019 | SEER | 2004-2016 | 13 | 92.6M | Included | no | no |
| 15. | USA | 507 | *Yu et al.*  | 32676391 | no data | 0.015 | SEER | 1973-2015 | 43 | 77.5M | Included | no | no |
| 16. | USA | 151 | *Wright et al.* | 16826584 | no data | 0.008 | SEER | 1973-2002 | 30 | 66.4M | Included | no | no |
| 17. | USA | 314 | *Zhou et al.*  | 34278741  | no data | 0.009 | SEER | 1975-2016 | 42 | 85.5M | Included | no | no |

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