



RISK FACTORS for GENITOURINARY TRACT MALIGNANCIES IN MICROSCOPIC HEMATURIA A META-ANALYSIS

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Definition





80.17 /1000 person-years (Ontario)



ER visits, Hospital admissions,
Urological procedures
Investigations: Cystoscopy, Imaging, lab



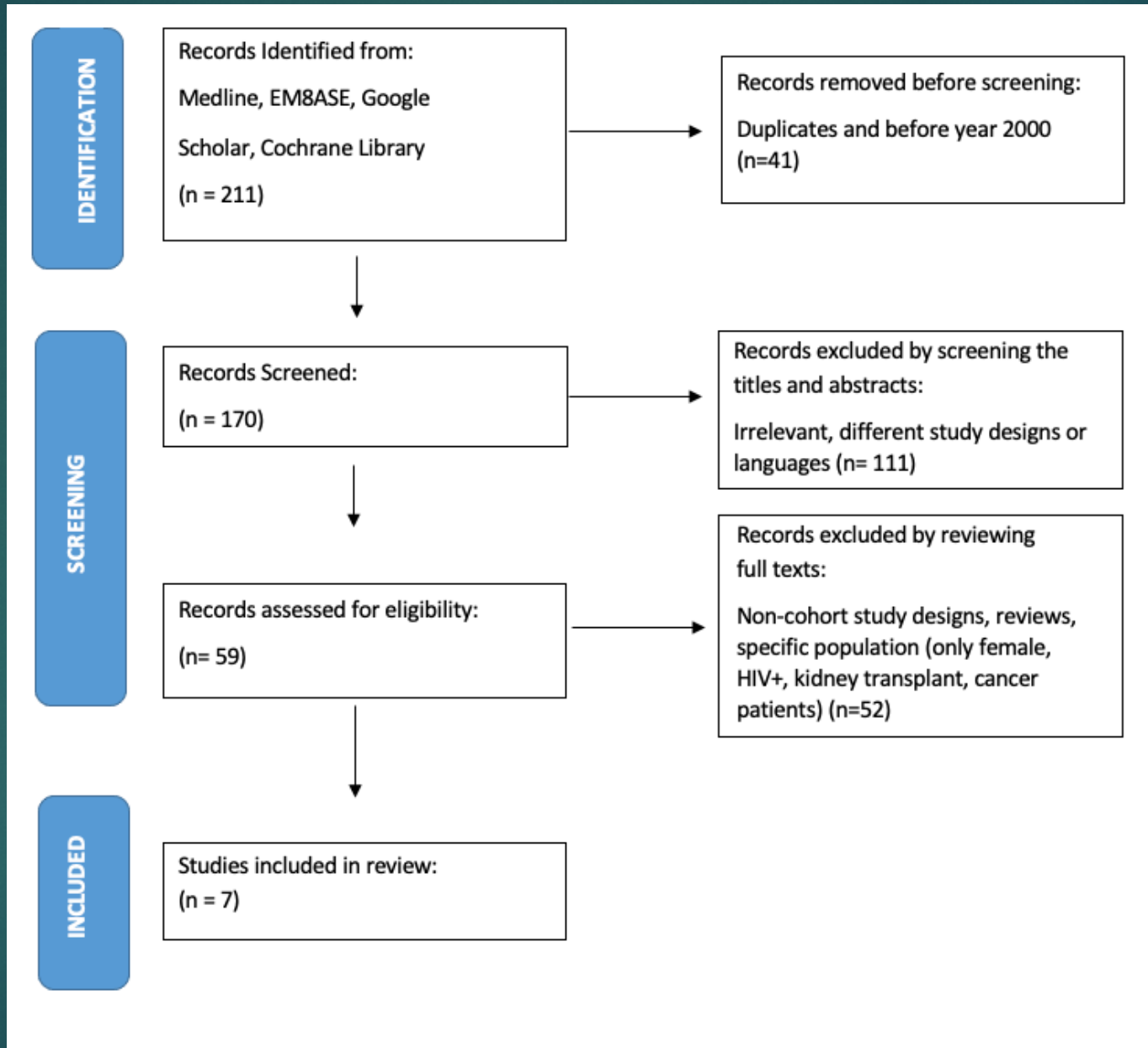
Genitourinary malignancy in MH: **3.3%**
(CI 95% 2.2 to 5.0%)

A lack of inclusive and comprehensive evidence to assess the risk factors for genitourinary malignancies in patients with confirmed MH.

To identify the risk factors for
genitourinary malignancies in patients
with **MH**

- ❖ Pre-planned search strategy- with no deviation afterwards
- ❖ Search engines:
Medline, EMBASE, Google Scholar, and Cochrane library
for the following
- ❖ Inclusion criteria
 - all peer-reviewed research
 - Articles from the year 2000 and onwards
 - only human studies
 - Cohort or clinical trials
 - Published in English
- ❖ Data Extraction, risk of bias and level of evidence
assessment:
 - RoB tool → The Newcastle Ottawa scale

RESULT (Search)



RESULT (RISK FACTORS)

- GENDER
- AGE
- SMOKING
- RACE
- LUTS (Lower Urinary Tract Symptoms)
- Anti-platelet, anti coagulant
- Occupational hazard
- RBC/hpf

GENDER (MALE)

first_author	year	sample size	outcome	outcome_n	Male_total_n	Male_case_n	male_OR (CI 95%)
Lucocq J	2021	525	GU malignancy	25	228	19	4.41 (1.73-11.23)
Sanci A	2021	1461	GU malignancy	50	953	46	1.92 (0.99-3.51)
Matulewicz RS	2020	2126	Bladder cancer	107	1076	73	1.38 (0.88-2.16)
Gonzalez AN	2019	2118	bladder cancer	25	750	14	1.86 (0.81-4.28)
Samson P	2017	1049	GU malignancy	12	429	10	NA
Lippmann QK	2017	3573	GU malignancy	219	2966	172	NA
Loo RK	2013	2630	GU malignancy	50	1154	38	2.5 (1.22-5.10)

AGE (> 60 Y/O)

first_author	year	sample size	outcome_variable	outcome_n	age_total_n	age_n	age_OR (CI 95%)
Lucocq J	2021	525	GU malignancy	25	310	23	7.73 (1.8-33.15)
Sanci A	2021	1461	GU malignancy	50	1083	49	1.03 (0.56-1.45)
Matulewicz RS	2020	2126	Bladder cancer	107	2126	107	1.06 (1.04-1.08)
Gonzalez AN	2019	2118	bladder cancer	25	2118	25	1.07 (1.03-1.11)
Samson P	2017	1049	GU malignancy	12	NA	NA	NA
Lippmann QK	2017	3573	GU malignancy	219	1520	168	3.1 (1.6–5.9)
Loo RK	2013	2630	GU malignancy	50	1753	47	7.36 (2.29-23.7)

SMOKING

first_author	year	sample size	outcome	outcome_n	total_n	case_n	OR (CI 95%)
Lucocq J	2021	525	GU malignancy	25	247	18	3.04 (1.25-7.41
Sanci A	2021	1461	GU malignancy	50	668	47	4.13 (2.77-7.62)
Matulewicz RS	2020	2126	Bladder cancer	107	573	40	2.7 (1.07-6.83)
Gonzalez AN	2019	2118	bladder cancer	25	176	16	5.1 (1.66-15.73)
Samson P	2017	1049	GU malignancy	12	279	10	NA
Lippmann QK	2017	3573	GU malignancy	219	1453	26	3.2 (1.8–5.9)
Loo RK	2013	2630	GU malignancy	50	1102	31	1.84 0.77-4.41)

RBC/hpf

first_author	year	sample size	Outcome	Outcome_n	Total_n	Case_n	OR
Lippmann QK	2017	3573	GU malignancy	219	812	20	1.8 (0.9–3.2)
Loo RK	2013	2630	GU malignancy	50	2175	34	1.26 (0.62-2.57)

RACE



first_author	year	sample_size	outcome_variable	Case_outcome_n	Black_total_n	Black_case_n	Black_OR (CI 95%)	Asian_total_n	Asian_case_n	Asian_OR (CI 95%)	Other_total_n	Other_case_n	Other_OR (CI 95%)	White_total_n	White_case_n	White_OR (CI 95%)
Matulewicz RS	2020	2126	Bladder cancer	107	432	11	0.54 (0.28-1.06)	432	4	1.05 (0.36-3.12)	230	9	0.7 (0.34-1.46)	1248	76	1
Loo RK	2013	2630	GU malignancy	50	178	9	1.82 (0.85-3.91)	161	1	0.21 (0.03-1.58)	162	2	0.43 (0.10-1.81)	1020	29	1

LUTS

first_author	year	sample size	Outcome	Outcome_n	LUTS_total_n	Case_n	LUTS_OR
Lucocq J	2021	525	GU malignancy	25	227	NA	0.87 (0.38-2)

Anti-platelet or anti-coagulant

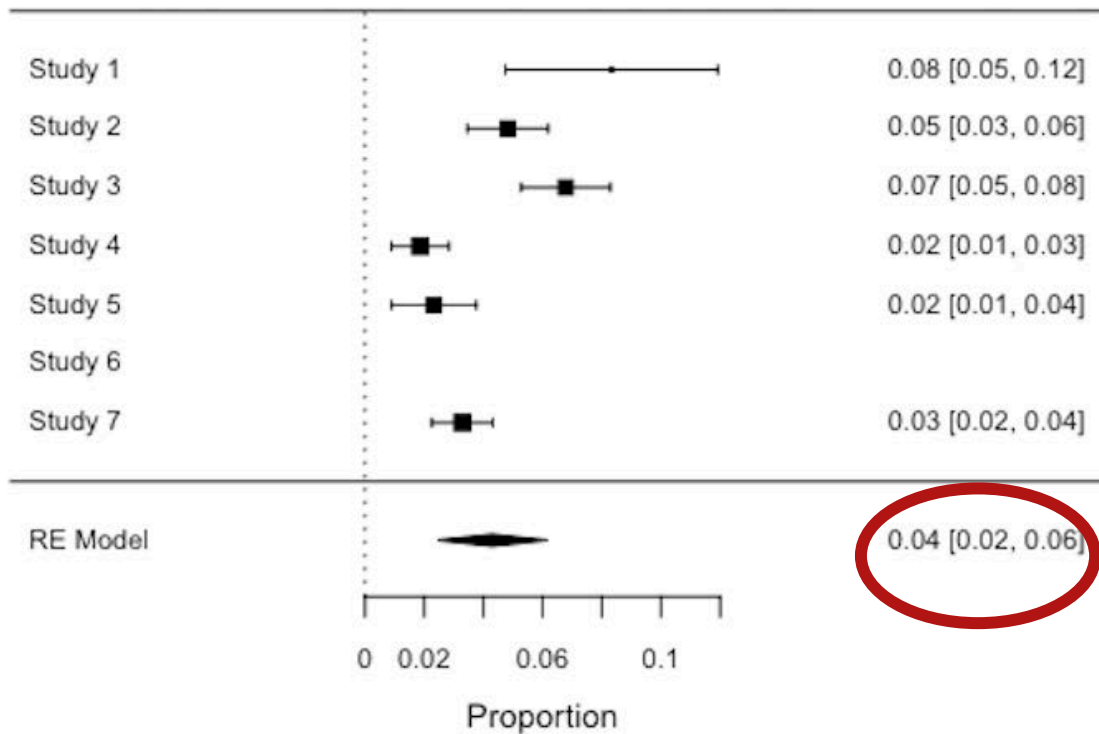
first_author	year	sample size	Outcome	Outcome n	AP/AC Total_n	Case_n	OR
Lucocq J	2021	525	GU malignancy	25	142	NA	1.8 (0.81-4.24)

OCCUPATIONAL HAZARDS



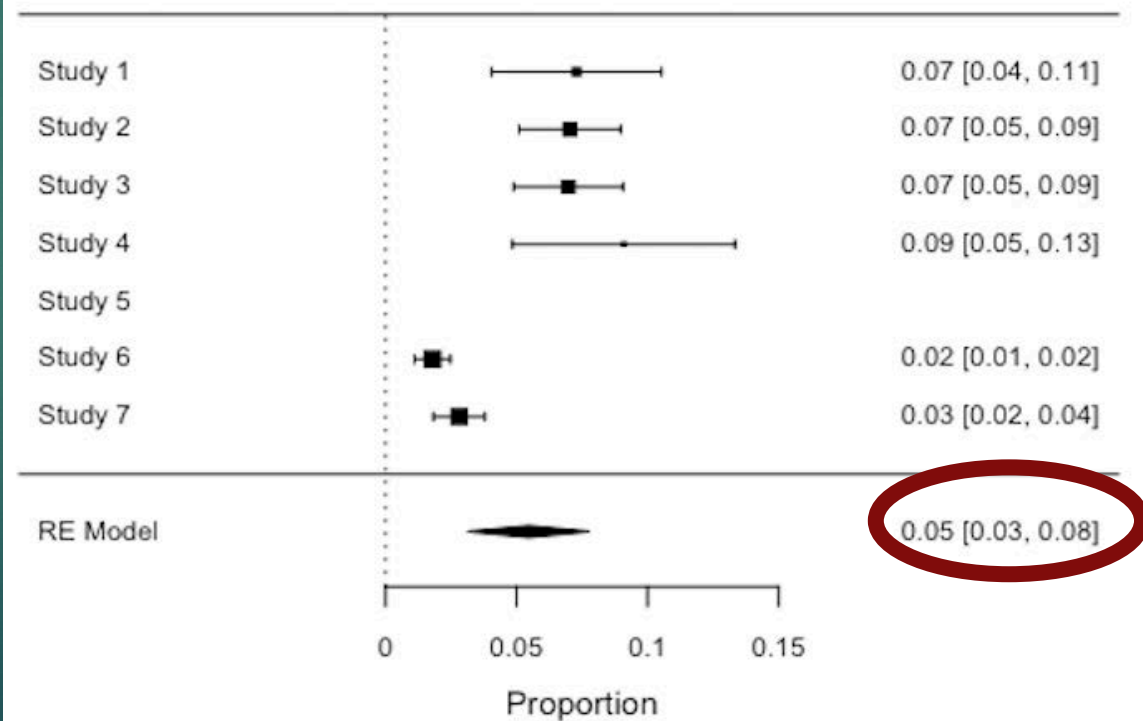
first_author	year	sample size	Outcome	Outcome_n	Total_n	Case_n	OR
Sanci A	2021	1461	genitourinary malignancy	50	81	38	1.03 (0.73-1.23)

RESULT (Meta-regression)

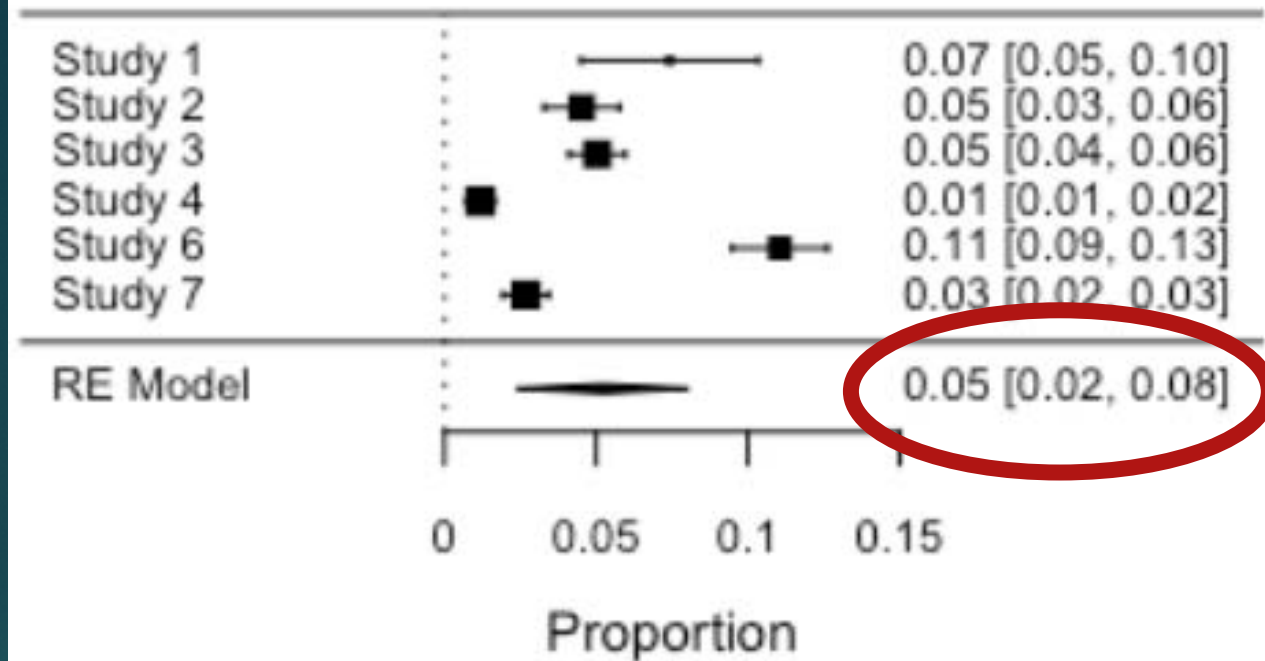


SMOKING

GENDER

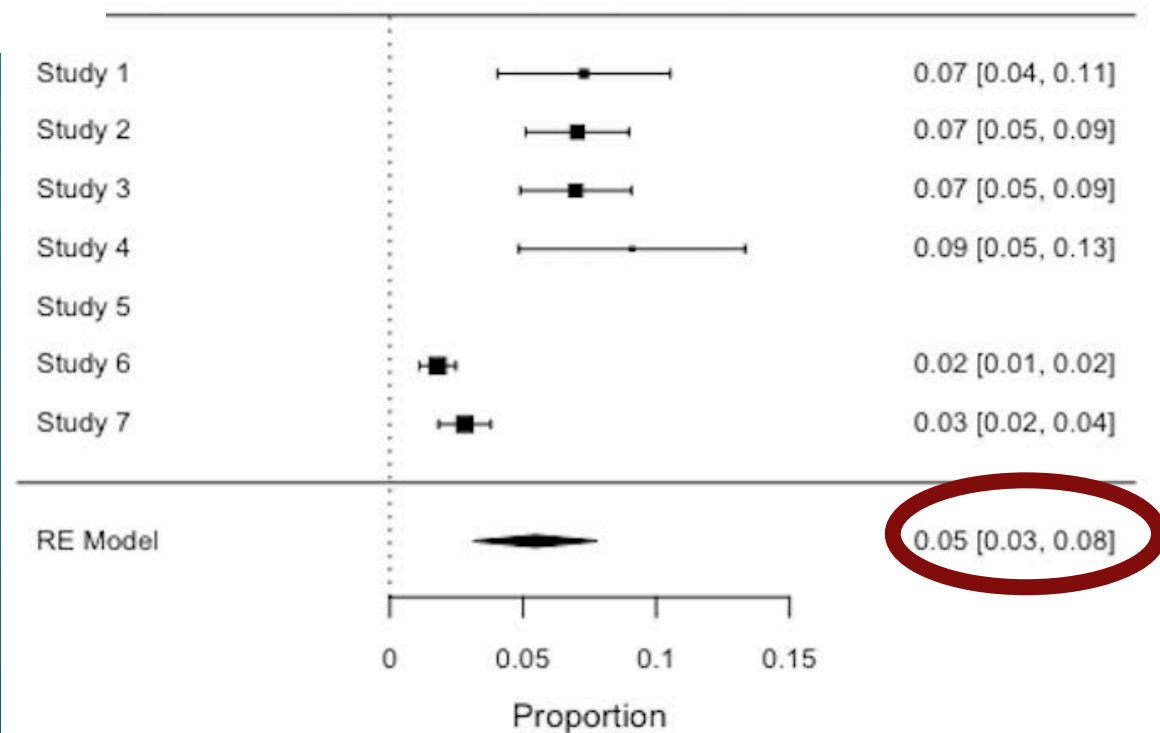


RESULT (Meta-regression)



RBC/hpf

Age > 60 y/o



HIGH HETEROGENEITY

Definition (MH)

Classification (predictive variable)

- Given the widespread screening in the absence of evidence to support its role, there is significant room to improve understanding of AMH and its management
- May help the primary care physician to be more prudent in requesting investigations
- May improve the current practice in approaching MH by honing the referral eligibility criteria. Consequently, coupled with reducing unnecessary workups, it can cut the health care system cost, i.e, serves as a cost-saving strategy.



THANK YOU