

Deliverable 2 – Health Analytics Project Design

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CS-6440 – Introduction to Health Informatics

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CLINICAL QUESTION

Do patients that have been treated with Anagrelide have a higher risk of cancer, compared with a more conventional alternative, Hydroxyurea?

Note that in Deliverable 1, the clinical question was:

In patients undergoing treatment for thrombocythemia, does those that have been treated with Anagrelide has a higher risk of thrombosis, compared with a more conventional alternative, Hydroxyurea? However, the total number of concept records for such clinical question is limited. Thus, another valid clinical question is needed for this deliverable.

One of the driving force for the development of Anagrelide is that Hydroxyurea has been reported for being related with cancer risk. For example, Nand et. al. reported that hydroxyurea has 1–5.9% risk of causing leukemic transformation (Nand, Stock, Godwin, & Fisher, 1996). Hanft et. al. further suggested that in vivo hydroxyurea exposure could cause acquired DNA mutations (Hanft et al., 2000). Thus, whether such suggestions against hydroxyurea is reasonable, and whether the alternatives thereof, such as Anagrelide, could perform better in cancer risk, will need to be investigated.

CONCEPT SETS

– [hxia40] anagrelide

<http://gt-health-analytics-1.us-east-1.elasticbeanstalk.com/#/conceptset/456/details>

The codes for Anagrelide is found from the ICD-10-CM code, which used to specify a diagnosis of long term (current) use of antithrombotics/antiplatelets, which is Z79.02 ("2020 ICD-10-CM Diagnosis Code Z79.02," 2020). Using this ICD code, I found the concept ID for the corresponding drug, Anagrelide, on Athena.

Concept Id	Concept Code	Concept Name
1797155	253453	peginterferon alfa-2b
1380068	5880	Interferon Alfa-2b
1381258	597855	anagrelide 1 MG Oral Capsule [Agrylin]
1381257	597852	anagrelide 1 MG Oral Capsule
1381259	597857	anagrelide 0.5 MG Oral Capsule [Agrylin]
19122203	597850	anagrelide 0.5 MG Oral Capsule
1381253	596724	anagrelide

The expression JSON is attached as Appendix 1.

- [hxia40] hydroxyurea

<http://gt-health-analytics-1.us-east-1.elasticbeanstalk.com/#/conceptset/459/details>

The code in anatomical therapeutic chemical (ATC) drug classification system for hydroxyurea is L01XX05, which can be found in this reference ("DRUG: Hydroxyurea,"). Using the ATC code, I then found related drug in Athena, followed by choosing related concepts in Atlas.

Concept Id	Concept Code	Concept Name
19007385	105602	hydroxyurea 500 MG Oral Capsule [Hydrea]
1377163	197797	hydroxyurea 500 MG Oral Capsule
1377169	213284	hydroxyurea 400 MG Oral Capsule [Droxia]
19023562	200344	hydroxyurea 400 MG Oral Capsule
1377168	213283	hydroxyurea 300 MG Oral Capsule [Droxia]
19023561	200343	hydroxyurea 300 MG Oral Capsule
1377167	213282	hydroxyurea 200 MG Oral Capsule [Droxia]
19023560	200342	hydroxyurea 200 MG Oral Capsule
1377171	284561	hydroxyurea 1000 MG Oral Tablet [Mylocel]
1377170	283475	hydroxyurea 1000 MG Oral Tablet
1377141	5552	hydroxyurea

The expression JSON is attached as Appendix 2.

- [hxia40] cancer

<http://gt-health-analytics-1.us-east-1.elasticbeanstalk.com/#/conceptset/527/details>

As it has been reported that hydroxyurea could cause acquired DNA mutations (Hanft et al., 2000), to investigate on how much cancerous risk is associated with hydroxyurea, all cancer-related concepts on Atlas have been selected:

Concept Id	Concept Code	Concept Name
4079687	277605001	Tumor lysis syndrome
444219	111254007	Osteitis deformans without bone tumor
434300	255046005	Neuroendocrine tumor
4100425	253001006	Merkel cell carcinoma
196058	188664008	Mast cell malignancy of intra-abdominal lymph nodes
4089655	187716008	Malignant tumor of Waldeyer's ring
73712	188240003	Malignant tumor of vault of bladder
197508	399326009	Malignant tumor of urinary bladder
4095167	188245008	Malignant tumor of ureteric orifice
4094855	187725002	Malignant tumor of upper third of esophagus
4090216	187606005	Malignant tumor of upper labial mucosa
4092524	188219004	Malignant tumor of undescended testis
4095755	188239000	Malignant tumor of trigone of urinary bladder
4095436	187792009	Malignant tumor of tail of pancreas

The expression JSON is attached as Appendix 3.

COHORTS

- [hxia40] patients taking Anagrelide

<http://gt-health-analytics-1.us-east-1.elasticbeanstalk.com/#/cohortdefinition/446>

The test view is attached as Appendix 4.

- [hxia40] patients taking Hydroxyurea

<http://gt-health-analytics-1.us-east-1.elasticbeanstalk.com/#/cohortdefinition/449>

The test view is attached as Appendix 5.

- [hxia40] cancer patients exposed to either drug

<http://gt-health-analytics-1.us-east-1.elasticbeanstalk.com/#/cohortdefinition/452>

The test view is attached as Appendix 6.

DISCUSSION

The number of records in the four concepts sets are listed below:

Concept set	anagrelide	hydroxyurea	cancer
Num of records	47,344	33,243	2,500,292

The numbers of records in the 100k dataset for the three cohorts are listed below:

Cohort	patients taking Anagrelide	patients taking Hydroxyurea	cancer patients exposed to either drug
Num of records	638	699	172

Although it has been reported that patients are diagnosed with cancer after being exposed to hydroxyurea from 0 to 21 months [ref], it is premature to assume exposure to hydroxyurea could immediately cause cancer – after all, the mutation risk (if significant) of hydroxyurea exposure will take time to be effective. Thus, for the outcome cohort, I defined the observation window to be 3 months – 3 years before index start date, to exclude the patients that are diagnosed with cancer immediately after hydroxyurea exposure.

REFERENCES

- 2020 ICD-10-CM Diagnosis Code Z79.02. (2020). Retrieved from <https://www.icd10data.com/ICD10CM/Codes/Z00-Z99/Z77-Z99/Z79-/Z79.02>
- DRUG: Hydroxyurea. Retrieved from https://www.genome.jp/dbget-bin/www_bget?dr:D00341
- Hanft, V. N., Fruchtman, S. R., Pickens, C. V., Rosse, W. F., Howard, T. A., & Ware, R. E. (2000). Acquired DNA mutations associated with in vivo hydroxyurea exposure. *Blood*, 95(11), 3589-3593.
- Nand, S., Stock, W., Godwin, J., & Fisher, S. G. (1996). Leukemogenic risk of hydroxyurea therapy in polycythemia vera, essential thrombocythemia, and myeloid metaplasia with myelofibrosis. *American journal of hematology*, 52(1), 42-46.

APPENDIX 1

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{
  "items": [
    {
      "concept": {
        "CONCEPT_ID": 1380068,
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        "STANDARD_CONCEPT_CAPTION": "Standard",
        "INVALID_REASON": "V",
        "INVALID_REASON_CAPTION": "Valid",
        "CONCEPT_CODE": "5880",
        "DOMAIN_ID": "Drug",
        "VOCABULARY_ID": "RxNorm",
        "CONCEPT_CLASS_ID": "Ingredient"
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      "concept": {
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        "CONCEPT_NAME": "anagrelide",
        "STANDARD_CONCEPT": "S",
        "STANDARD_CONCEPT_CAPTION": "Standard",
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        "VOCABULARY_ID": "RxNorm",
        "CONCEPT_CLASS_ID": "Ingredient"
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      "isExcluded": false,
      "includeDescendants": false,
      "includeMapped": false
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        "CONCEPT_CLASS_ID": "Clinical Drug"
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      "isExcluded": false,
      "includeDescendants": false,
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  ],
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  "includeDescendants": false,
  "includeMapped": false
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    "CONCEPT_NAME": "anagrelide 1 MG Oral Capsule",
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    "STANDARD_CONCEPT_CAPTION": "Standard",
    "INVALID_REASON": "V",
    "INVALID_REASON_CAPTION": "Valid",
    "CONCEPT_CODE": "597852",
    "DOMAIN_ID": "Drug",
    "VOCABULARY_ID": "RxNorm",
    "CONCEPT_CLASS_ID": "Clinical Drug"
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  "isExcluded": false,
  "includeDescendants": false,
  "includeMapped": false
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    "STANDARD_CONCEPT_CAPTION": "Standard",
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    "VOCABULARY_ID": "RxNorm",
    "CONCEPT_CLASS_ID": "Branded Drug"
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  "isExcluded": false,
  "includeDescendants": false,
  "includeMapped": false
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  "concept": {
    "CONCEPT_ID": 1797155,
    "CONCEPT_NAME": "peginterferon alfa-2b",

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```

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        "CONCEPT_CLASS_ID": "Ingredient"
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    "isExcluded": false,
    "includeDescendants": false,
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APPENDIX 2

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        "CONCEPT_NAME": "hydroxyurea",
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        "STANDARD_CONCEPT_CAPTION": "Standard",
        "INVALID_REASON": "V",
        "INVALID_REASON_CAPTION": "Valid",
        "CONCEPT_CODE": "5552",
        "DOMAIN_ID": "Drug",
        "VOCABULARY_ID": "RxNorm",
        "CONCEPT_CLASS_ID": "Ingredient"
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      "isExcluded": false,
      "includeDescendants": false,
      "includeMapped": false
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        "CONCEPT_NAME": "hydroxyurea 1000 MG Oral Tablet",
        "STANDARD_CONCEPT": "S",
        "STANDARD_CONCEPT_CAPTION": "Standard",
        "INVALID_REASON": "V",
        "INVALID_REASON_CAPTION": "Valid",
        "CONCEPT_CODE": "283475",
        "DOMAIN_ID": "Drug",
        "VOCABULARY_ID": "RxNorm",
        "CONCEPT_CLASS_ID": "Clinical Drug"
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      "isExcluded": false,
      "includeDescendants": false,
      "includeMapped": false
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"concept": {
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  "STANDARD_CONCEPT_CAPTION": "Standard",
  "INVALID_REASON": "V",
  "INVALID_REASON_CAPTION": "Valid",
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  "DOMAIN_ID": "Drug",
  "VOCABULARY_ID": "RxNorm",
  "CONCEPT_CLASS_ID": "Branded Drug"
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"isExcluded": false,
"includeDescendants": false,
"includeMapped": false
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    "CONCEPT_NAME": "hydroxyurea 200 MG Oral Capsule",
    "STANDARD_CONCEPT": "S",
    "STANDARD_CONCEPT_CAPTION": "Standard",
    "INVALID_REASON": "V",
    "INVALID_REASON_CAPTION": "Valid",
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    "DOMAIN_ID": "Drug",
    "VOCABULARY_ID": "RxNorm",
    "CONCEPT_CLASS_ID": "Clinical Drug"
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  "isExcluded": false,
  "includeDescendants": false,
  "includeMapped": false
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    "CONCEPT_NAME": "hydroxyurea 200 MG Oral Capsule [Droxia]",
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    "STANDARD_CONCEPT_CAPTION": "Standard",
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    "INVALID_REASON_CAPTION": "Valid",
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    "CONCEPT_CLASS_ID": "Branded Drug"
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  "isExcluded": false,
  "includeDescendants": false,
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    "CONCEPT_NAME": "hydroxyurea 300 MG Oral Capsule",
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        "VOCABULARY_ID": "RxNorm",
        "CONCEPT_CLASS_ID": "Branded Drug"
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    "includeDescendants": false,
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]
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APPENDIX 3

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{
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                "CONCEPT_ID": 438990,
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  "includeDescendants": false,
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  "CONCEPT_CLASS_ID": "Clinical Finding"
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"isExcluded": false,
"includeDescendants": false,
"includeMapped": false
},
{
  "concept": {
    "CONCEPT_ID": 192855,
    "CONCEPT_NAME": "Cancer in situ of urinary bladder",
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    "STANDARD_CONCEPT_CAPTION": "Standard",
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  "includeDescendants": false,
  "includeMapped": false
}
]
}

```

APPENDIX 4

[hxia40] patients taking Anagrelide

Initial Event Cohort

People having any of the following:

a drug exposure of [hxia40] anagrelide1

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: earliest event per person.

Limit qualifying cohort to: earliest event per person.

End Date Strategy

No end date strategy selected. By default, the cohort end date will be the end of the observation period that contains the index event.

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

[hxia40] anagrelide

Concept Id	Concept Name	Domain	Vocabulary	Excluded	Descendants	Mapped
1380068	Interferon Alfa-2b	Drug	RxNorm NO	NO NO		
1381253	anagrelide	Drug	RxNorm NO	NO		
19122203	anagrelide 0.5 MG Oral Capsule	Drug	RxNorm NO	NO NO		
1381259	anagrelide 0.5 MG Oral Capsule [Agrylin]	Drug	RxNorm NO	NO NO		
1381257	anagrelide 1 MG Oral Capsule	Drug	RxNorm NO	NO NO		
1381258	anagrelide 1 MG Oral Capsule [Agrylin]	Drug	RxNorm NO	NO NO		
1797155	peginterferon alfa-2b	Drug	RxNorm NO	NO NO		

APPENDIX 5

[hxia40] patients taking Hydroxyurea

Initial Event Cohort

People having any of the following:

a drug exposure of [hxia40] hydroxyurea1

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: earliest event per person.

Limit qualifying cohort to: earliest event per person.

End Date Strategy

No end date strategy selected. By default, the cohort end date will be the end of the observation period that contains the index event.

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

[hxia40] hydroxyurea

Concept Id	Concept Name	Domain	Vocabulary	Excluded	Descendants	Mapped
1377141	hydroxyurea	Drug	RxNorm NO	NO		
1377170	hydroxyurea 1000 MG Oral Tablet	Drug	RxNorm NO	NO NO		
1377171	hydroxyurea 1000 MG Oral Tablet [Mylocel]	Drug	RxNorm NO	NO NO		
19023560	hydroxyurea 200 MG Oral Capsule	Drug	RxNorm NO	NO NO		
1377167	hydroxyurea 200 MG Oral Capsule [Droxia]	Drug	RxNorm NO	NO NO		
19023561	hydroxyurea 300 MG Oral Capsule	Drug	RxNorm NO	NO NO		
1377168	hydroxyurea 300 MG Oral Capsule [Droxia]	Drug	RxNorm NO	NO NO		
19023562	hydroxyurea 400 MG Oral Capsule	Drug	RxNorm NO	NO NO		
1377169	hydroxyurea 400 MG Oral Capsule [Droxia]	Drug	RxNorm NO	NO NO		
1377163	hydroxyurea 500 MG Oral Capsule	Drug	RxNorm NO	NO NO		
19007385	hydroxyurea 500 MG Oral Capsule [Hydrea]	Drug	RxNorm NO	NO NO		

APPENDIX 6

[hxia40] cancer patients exposed to either drug

Initial Event Cohort

People having any of the following:

a condition occurrence of [hxia40] cancer2

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: earliest event per person.

Inclusion Rules

Inclusion Criteria #1: exposed to either drug

Having any of the following criteria:

at least 1 occurrences of a drug exposure of [hxia40] anagrelide1

where event starts between 1095 days Before and 90 days Before index start date

or at least 1 occurrences of a drug exposure of [hxia40] hydroxyurea3

where event starts between 1095 days Before and 90 days Before index start date

Limit qualifying cohort to: earliest event per person.

End Date Strategy

No end date strategy selected. By default, the cohort end date will be the end of the observation period that contains the index event.

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

[hxia40] anagrelide

Concept Id	Concept Name	Domain	Vocabulary	Excluded	Descendants	Mapped
1380068	Interferon Alfa-2b	Drug	RxNorm	NO	NO	
1381253	anagrelide	Drug	RxNorm	NO		
19122203	anagrelide 0.5 MG Oral Capsule	Drug	RxNorm	NO	NO	NO
1381259	anagrelide 0.5 MG Oral Capsule [Agrylin]	Drug	RxNorm	NO	NO	NO
1381257	anagrelide 1 MG Oral Capsule	Drug	RxNorm	NO	NO	NO
1381258	anagrelide 1 MG Oral Capsule [Agrylin]	Drug	RxNorm	NO	NO	NO
1797155	peginterferon alfa-2b	Drug	RxNorm	NO	NO	

[hxia40] cancer

Concept Id	Concept Name	Domain	Vocabulary	Excluded	Descendants	Mapped
438990	Benign neuroendocrine tumor	Condition	SNOMED	NO	NO	NO
193431	Benign tumor of digestive organ	Condition	SNOMED	NO	NO	NO
193722	Benign tumor of endocrine pancreas	Condition	SNOMED	NO	NO	NO
434605	Benign tumor of lacrimal drainage structure	Condition	SNOMED	NO	NO	NO
198991	Benign tumor of peritoneum and retroperitoneum	Condition	SNOMED	NO	NO	NO
433979	Benign tumor of respiratory and intrathoracic organ	Condition	SNOMED	NO	NO	NO
201807	Burkitt's tumor of intra-abdominal lymph nodes	Condition	SNOMED	NO	NO	NO
438376	Burkitt's tumor of intrathoracic lymph nodes	Condition	SNOMED	NO	NO	NO
433426	Burkitt's tumor of lymph nodes of axilla AND/OR upper limb	Condition	SNOMED	NO	NO	NO
437504	Burkitt's tumor of lymph nodes of head, face AND/OR neck	Condition	SNOMED	NO	NO	NO
444440	Burkitt's tumor of spleen	Condition	SNOMED	NO	NO	NO
192855	Cancer in situ of urinary bladder	Condition	SNOMED	NO	NO	NO
437238	Carcinoid tumor of appendix	Condition	SNOMED	NO	NO	NO
443565	Carcinoid tumor of gastrointestinal tract	Condition	SNOMED	NO	NO	NO
432271	Carcinoid tumor of ileum	Condition	SNOMED	NO	NO	NO

193155	Carcinoid tumor of large intestine	Condition	SNOMED	NO	NO	NO	
198100	Carcinoid tumor of small intestine	Condition	SNOMED	NO	NO	NO	
194306	Carcinoid tumor of stomach	Condition	SNOMED	NO	NO	NO	
433435	Carcinoma in situ	Condition	SNOMED	NO	NO	NO	
436671	Carcinoma in situ of anal canal	Condition	SNOMED	NO	NO	NO	
78110	Carcinoma in situ of anus	Condition	SNOMED	NO	NO	NO	
81250	Carcinoma in situ of breast	Condition	SNOMED	NO	NO	NO	
4093960	Carcinoma in situ of bronchus and lung	Condition	SNOMED	NO	NO	NO	NO
75512	Carcinoma in situ of colon	Condition	SNOMED	NO	NO	NO	
4116351	Carcinoma in situ of ear	Condition	SNOMED	NO	NO	NO	
373732	Carcinoma in situ of eye	Condition	SNOMED	NO	NO	NO	
192577	Carcinoma in situ of female genital organ	Condition	SNOMED	NO	NO	NO	NO
192291	Carcinoma in situ of intestinal tract	Condition	SNOMED	NO	NO	NO	
24897	Carcinoma in situ of larynx	Condition	SNOMED	NO	NO	NO	
441819	Carcinoma in situ of lip, oral cavity and pharynx	Condition	SNOMED			NO	NO
	NO						
192292	Carcinoma in situ of liver and/or biliary system	Condition	SNOMED			NO	NO
	NO						
196068	Carcinoma in situ of male genital organ	Condition	SNOMED	NO	NO	NO	NO
193162	Carcinoma in situ of penis	Condition	SNOMED	NO	NO	NO	
200970	Carcinoma in situ of prostate	Condition	SNOMED	NO	NO	NO	
75210	Carcinoma in situ of rectum	Condition	SNOMED	NO	NO	NO	
261528	Carcinoma in situ of respiratory tract	Condition	SNOMED	NO	NO	NO	NO
139766	Carcinoma in situ of scalp and skin of neck	Condition	SNOMED	NO	NO	NO	NO
138996	Carcinoma in situ of skin	Condition	SNOMED	NO	NO	NO	
434883	Carcinoma in situ of skin of eyelid including canthus	Condition	SNOMED			NO	NO
	NO						
133726	Carcinoma in situ of skin of face	Condition	SNOMED	NO	NO	NO	
133725	Carcinoma in situ of skin of lip	Condition	SNOMED	NO	NO	NO	
134308	Carcinoma in situ of skin of lower limb	Condition	SNOMED	NO	NO	NO	NO
132862	Carcinoma in situ of skin of trunk, excluding scrotum	Condition	SNOMED			NO	NO
	NO						
437240	Carcinoma in situ of skin of upper limb and shoulder	Condition	SNOMED			NO	NO
	NO						
200974	Carcinoma in situ of stomach	Condition	SNOMED	NO	NO	NO	
81247	Carcinoma in situ of urinary system	Condition	SNOMED	NO	NO	NO	
194611	Carcinoma in situ of uterine cervix	Condition	SNOMED	NO	NO	NO	
192581	Carcinoma in situ of uterus	Condition	SNOMED	NO	NO	NO	
195513	Carcinoma in situ of vagina	Condition	SNOMED	NO	NO	NO	
438386	Carcinoma in situ of vulva	Condition	SNOMED	NO	NO	NO	
443571	Cervicovaginal cytology: High grade squamous intraepithelial lesion or carcinoma					Condition	
	SNOMED	NO	NO	NO			
4194462	Chorioretinal tumor	Condition	SNOMED	NO	NO	NO	
438701	Disseminated malignancy of unknown primary	Condition	SNOMED			NO	NO
	NO						
4167696	Estrogen receptor positive tumor	Condition	SNOMED	NO	NO	NO	
441692	Finding of serum tumor marker level	Condition	SNOMED	NO	NO	NO	NO
438151	Glaucoma associated with tumors AND/OR cysts	Condition	SNOMED			NO	NO
	NO						
4331508	Increased cancer antigen 125	Condition	SNOMED	NO	NO	NO	
40482859	Malignant carcinoid tumor	Condition	SNOMED	NO	NO	NO	NO
4040379	Malignant mast cell tumor	Condition	SNOMED	NO	NO	NO	
4180794	Malignant retroperitoneal tumor	Condition	SNOMED	NO	NO	NO	
4095437	Malignant tumor of Islets of Langerhans	Condition	SNOMED	NO	NO	NO	NO
4094863	Malignant tumor of Meckel's diverticulum	Condition	SNOMED	NO	NO	NO	NO
4089655	Malignant tumor of Waldeyer's ring	Condition	SNOMED	NO	NO	NO	NO

4095316	Malignant tumor of abdominal part of esophagus	Condition	SNOMED	NO	NO	NO
4090224	Malignant tumor of anterior floor of mouth	Condition	SNOMED	NO	NO	NO
435754	Malignant tumor of ascending colon	Condition	SNOMED	NO	NO	NO
4095756	Malignant tumor of bladder neck	Condition	SNOMED	NO	NO	NO
4092072	Malignant tumor of body of pancreas	Condition	SNOMED	NO	NO	NO
4095320	Malignant tumor of body of stomach	Condition	SNOMED	NO	NO	NO
443391	Malignant tumor of cecum	Condition	SNOMED	NO	NO	NO
4094854	Malignant tumor of cervical part of esophagus	Condition	SNOMED	NO	NO	NO
198984	Malignant tumor of cervix	Condition	SNOMED	NO	NO	NO
4092211	Malignant tumor of glottis	Condition	SNOMED	NO	NO	NO
4150793	Malignant tumor of lower labial mucosa	Condition	SNOMED	NO	NO	NO
4089656	Malignant tumor of lower third of esophagus	Condition	SNOMED	NO	NO	NO
4092060	Malignant tumor of middle third of esophagus	Condition	SNOMED	NO	NO	NO
4177107	Malignant tumor of nasal cavity	Condition	SNOMED	NO	NO	NO
25189	Malignant tumor of oral cavity	Condition	SNOMED	NO	NO	NO
4094866	Malignant tumor of pancreatic duct	Condition	SNOMED	NO	NO	NO
4094721	Malignant tumor of posterior wall of oropharynx	Condition	SNOMED	NO	NO	NO
4092212	Malignant tumor of supraglottis	Condition	SNOMED	NO	NO	NO
4095436	Malignant tumor of tail of pancreas	Condition	SNOMED	NO	NO	NO
4095755	Malignant tumor of trigone of urinary bladder	Condition	SNOMED	NO	NO	NO
4092524	Malignant tumor of undescended testis	Condition	SNOMED	NO	NO	NO
4090216	Malignant tumor of upper labial mucosa	Condition	SNOMED	NO	NO	NO
4094855	Malignant tumor of upper third of esophagus	Condition	SNOMED	NO	NO	NO
4095167	Malignant tumor of ureteric orifice	Condition	SNOMED	NO	NO	NO
197508	Malignant tumor of urinary bladder	Condition	SNOMED	NO	NO	NO
73712	Malignant tumor of vault of bladder	Condition	SNOMED	NO	NO	NO
196058	Mast cell malignancy of intra-abdominal lymph nodes	Condition	SNOMED	NO	NO	NO
4100425	Merkel cell carcinoma	Condition	SNOMED	NO	NO	NO
434300	Neuroendocrine tumor	Condition	SNOMED	NO	NO	NO
444219	Osteitis deformans without bone tumor	Condition	SNOMED	NO	NO	NO
4079687	Tumor lysis syndrome	Condition	SNOMED	NO	NO	NO

[hxia40] hydroxyurea

Concept Id	Concept Name	Domain	Vocabulary	Excluded	Descendants	Mapped
1377141	hydroxyurea	Drug	RxNorm	NO	NO	NO
1377170	hydroxyurea 1000 MG Oral Tablet	Drug	RxNorm	NO	NO	NO
1377171	hydroxyurea 1000 MG Oral Tablet [Mylocel]	Drug	RxNorm	NO	NO	NO
19023560	hydroxyurea 200 MG Oral Capsule	Drug	RxNorm	NO	NO	NO
1377167	hydroxyurea 200 MG Oral Capsule [Droxia]	Drug	RxNorm	NO	NO	NO
19023561	hydroxyurea 300 MG Oral Capsule	Drug	RxNorm	NO	NO	NO
1377168	hydroxyurea 300 MG Oral Capsule [Droxia]	Drug	RxNorm	NO	NO	NO
19023562	hydroxyurea 400 MG Oral Capsule	Drug	RxNorm	NO	NO	NO
1377169	hydroxyurea 400 MG Oral Capsule [Droxia]	Drug	RxNorm	NO	NO	NO
1377163	hydroxyurea 500 MG Oral Capsule	Drug	RxNorm	NO	NO	NO
19007385	hydroxyurea 500 MG Oral Capsule [Hydrea]	Drug	RxNorm	NO	NO	NO

