

Construction of Local Data Dictionary in the Field of Nuclear Medicine

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Abstract

A controlled medical vocabulary is a vital component of medical information management because it enables computers to use information meaningfully and different institutions to share the medical data. There are currently many standard medical vocabularies - SNOMED-CT, ICD-10, UMLS, GALEN, MED, etc, but none is universally accepted as an optimal controlled medical vocabulary for application to medical information system. Moreover, it is difficult to settle the well-designed local data dictionary consisting of controlled medical vocabularies for the individual hospital information system (HIS). One of the major reasons is the local terminology with poor contents have been used in the hospital. Thus, as a trial, the local controlled vocabulary referencing system has been constructed in a limited medical field - nuclear medicine. We selected practical nuclear medicine terms from interpretation reports and electronic medical records, and removed ambiguity and redundancy, mapping the selected terms to standard medical vocabularies. Relationship and hierarchy structure between terms have been made, referring to standard medical vocabularies. Further studies may be warranted.

Keywords: controlled medical vocabulary, information management, nuclear medicine

Introduction

A controlled medical vocabulary is an essential component of medical information management [1] because it enables computers to use information meaningfully and different institutions to share the medical data. There are currently many standard medical vocabularies - SNOMED-CT, ICD-10, UMLS, GALEN, MED, etc, but none is universally accepted as an optimal controlled medical vocabulary for application to medical information system. Moreover, it is difficult to settle the well-designed local data dictionary consisting of controlled medical vocabularies for the individual hospital information system (HIS). One of the major reasons is the local terminology with poor contents have been used in the hospital. Thus, as a trial, the local controlled vocabulary referencing system has been constructed in a limited medical field - nuclear medicine.

Materials and Methods

We selected practical nuclear medicine terms from interpretation reports and electronic medical records, and removed ambiguity and redundancy, mapping the selected terms to standard medical vocabularies. Relationship and hierarchy structure between terms have been made,

referring to standard medical vocabularies. Mapping our local terms used in nuclear medicine with standard medical vocabularies such as SNOMED-CT terminology system was done by nuclear physicians.

Results

By constructing local data dictionary for the terms used in nuclear medicine, more normalized data could be stored in the database of imaging reports and electronic medical records. However, more detailed results will be obtained after complete construction is accomplished. More studies are under testing.

Fig 1. Illustration of local data dictionary for the terms used in nuclear medicine.

번호	항목	용어유형	대표용어	대표용어(가)	개념 영역	개념ID	상위용어	종류어	종류어ID
1	uptake		radioactive uptake	T00396190	방사능상취	D00404712			T00214249
2	bone metastases		bone metastases	T00393204	뼈 전이	D00229261			T00211578
4	adrenal metastasis		metastasis adrenal gland adenoma adenocarcinoma	T00393910	정맥 위상 부신샘 전이	D00146231			T00074014
5	radioisotope contamination		radioisotope contamination	T00393913	방사능오염	D00175403			T00006929
6	radioisotope thyroid ablation		Thyroid gland ablation - irradiation	T00340296	갑상선 용해 - 방사선조사	D00006697			T00020776
7	VO scan		VO- Ventilation perfusion scan	T00385792	환기 관류 스캔	D001208381			T00018693
8	decreased perfusion		hypoperfusion	T00295153	관류저하	D00117434			T00009929
9	metabolic defect		defective metabolism	T00292032	대사장애	D00110039			T00016692
10	hypermetabolism	대용어	hypermetabolism	T00276697	과다대사증	D00051952			T00018693
11	perfusion defect	대용어	perfusion defect	T00295142	관류결손	D00117434			T00020985
12	redistribution	대용어	redistribution	T00395163	재분포	D00119396			T00018693
13	reversibility	대용어	reversibility	T00245296	가역성	D00002960			T00020985
14	perfusion	대용어	perfusion	T00296193	관류	D00119008			T00018693
15	radioisotope	대용어	radioisotope	T00294102	방사성동위원소	D00075005			T00018693
16	radioisotope	대용어	radioisotope	T00294209	방사성 동위원소	D00075037			T00018693
17	within normal limits	대용어	within normal limits	T00395229	정상범위내	D00165000			T00018693
18	vascular reserve		not found	not found	not found	not found			not found
19	ventricular reflux		not found	not found	not found	not found			not found
20	thyroid remnant		not found	not found	not found	not found			not found
21	physiologic uptake		not found	not found	not found	not found			not found
22	attenuation artifact		not found	not found	not found	not found			not found
23	contamination artifact		not found	not found	not found	not found			not found
24	scintigraphic evidence		not found	not found	not found	not found			not found
25	injection artifact		not found	not found	not found	not found			not found
26	high probability		not found	not found	not found	not found			not found
27	intermediate probability		not found	not found	not found	not found			not found
28	low probability		not found	not found	not found	not found			not found
29	pericardized myocardium		not found	not found	not found	not found			not found

Acknowledgments

The authors thank Joo-Young Kim Gachon University Gil Hospital for the help of mapping of nuclear medicine terms.

References

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