Korea Standard Reference Data for Stroke–related MR Lesions

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Number one cause of death & disability in Korea
  Roles of alpha-numeric DB for the past 50 years

MRI: single most important data in cerebrovascular clinic
  Large amount of graphic data
  Hard to get population-based standard reference data
한국인 뇌MR영상 데이터센터
• **Stroke registry**
  – Research
    • Idea generation
    • Pilot data
    • Plan for a prospective cohort or randomized trial
    • Registry research
      – eg. IV-tPA <3h vs. 3~4.5h from SITS registry to support ECASS-III

  – **Clinical Practice**
    • Improving the quality of stroke care
• Image data regarded as the most critical information, but...

• Text or Numeric Data vs. Image Data
  – Quantitative vs. Qualitative data
  – Automatic or Semi-automatic vs. Laborious manual analyses
  – Image data itself not embedded in most stroke registries, instead
    • Embedded as ordinal numeric or nominal Boolean data
    • Linked as a non-quantifiable (hand-drawn) graphic format (jpg, tiff)
Key films for 8 patients
How could we incorporate these data into the stroke registry as a quantifiable format?
Diffusion MR, FLAIR MR, T2 MR, Gradient-echo MR
A NEW IMAGE-BASED STROKE REGISTRY CONTAINING QUANTITATIVE MRI DATA
DE Kim et al. CVD in press
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Data collection
일산 동국대학교병원/노원은지병원/
대전은지병원/동아대학교병원/
분당서울대학교병원/서울의료원/
순천향대학교병원/영남대학교병원/
일산백병원/전남대학교병원_이상
11개의 협력병원에서 매일 Stroke
환자의 한해서 Diffusion, Flair, T2,
Gradient echo MRI 를 업로드 하여 자료를 수집합니다.
뇌MR영상 국가참조표준센터

데이터 수집

데이터 생산 과정

데이터 생성
1차 REVIEW
2차 REVIEW

기술위원회는 상기 결과물 최종 판정 후 추인

외부 평가단 승인단계 (마침병 3단으로 구성)

다방면 3단으로 구성된 외부 평가단에 redo 보류, 합격 여부 판정

국가참조표준체계

KRISS
Illustration of Utility

**Graphs:**
- **Onset Age of the First Ischemic Stroke**
  - G/G vs. A/A or G/A for rs11833579 SNP
  - G/G vs. A/A or G/A for rs12425791 SNP

**Cumulative Frequency (%)**
- rs11833579 SNP A/A or G/A vs. G/G
- rs12425791 SNP A/A or G/A vs. G/G

**Research Article**
*NINJ2 SNP may affect the onset age of first-ever ischemic stroke without increasing silent cerebrovascular lesions*

Dong-Eog Kim, Sang-Mi Noh, Sang-Wuk Jeong, and Min-Ho Cha

Kim et al. BMC Research Notes 2012; 5:155
http://www.biomedcentral.com/1756-0500/5/155
Korea Standard Reference Data for Stroke–related MR Lesions for

- National Health Statistics
- Research: Drug Trial or other Academic Research
- Clinical Utility: Objective MR Reading
- Industry: Embedding into the PACS system
THANK YOU!