Background Miscarriage is one of the most common complications in early pregnancy loss; however, its prevalence varies depending on the type of miscarriage investigated, and the type of measurement used for collecting data. Research assessing the validity of the outcome of a diagnosis of miscarriage at hospital settings is sparse in Ireland. Therefore, the aim of this study was to determine agreement between hospital discharges for the diagnosis of miscarriage between three data sources from January to June 2017 in Ireland.

Methods This retrospective chart review study compared agreement of diagnosis of miscarriage among inpatient admissions between the electronic health records (EHR), the Hospital In-Patient Enquiry (HIPE), and register books at Cork University Maternity Hospital (CUMH). Also, we compared classification of type of miscarriage at the time of admissions including: complete, incomplete, late and missed miscarriage. Other types of early pregnancy loss (i.e. ectopic and molar pregnancy) were reviewed. After excluding duplicates or missing data, 294 diagnoses of miscarriage were identified in 357 EHR records, 295 in 366 EHR records, and 224 in 260 register books records. Kappa (k), sensitivity, specificity, positive and negative predictive value (PPV & NPV) were calculated to assess level of agreement between the three data sources.

Results Using EHR as a gold standard, HIPE had a sensitivity of 98.3%, specificity of 87.5%, PPV of 96.2%, NPV of 93.9%, with a very good strength of agreement (k=0.88; p-value <0.001). Using EHR as a gold standard, register books had a sensitivity of 97.3%, specificity of 77.2%, PPV of 95.1%, NPV of 85.0 with a good strength level of agreement (k=0.77; p-value <0.001). Approximately, 60% of diagnosis of miscarriage were classified as incomplete miscarriage by the HER and HIPE (n=245 and n=235 respectively) compared to only 3.1% by the register books (n=12). Almost 40% of admissions of miscarriage were classified as missed miscarriages by the registered books. According to HIPE and register books, there were approximately 28% (n=28) late miscarriages, compared to 11% (n=42) identified by EHR.

Conclusion Our findings indicate that HIPE and EHR are reliable and valid databases for monitoring and reporting prevalence of miscarriage in Ireland. However, discrepancy was found when comparing type of admissions of miscarriages. There is a need to standardised classification of type of miscarriages between data registers in Ireland. This is essential to identify the most efficient type of treatment according to the type of miscarriage among women who miscarry.

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