Min-Taek Lee, Wonbin Choi, Seung-Hun You, Sewon Park,     Some Time Serious AE     OVID19 vaccines with serious AE     Cardiac     Cardiac     Cardiac Cardiac     Cardiac Cardiac     Cardiac Cardiac     Cardiac Cardiac     Cardiac Cardiac     Colspan="2">Colspan="2"     Colspan=
SSRs following mRNA   System organ class   Cluster 1   Cluster 2   Cluster 3   Cluster 4
OVID19 vaccines with serious AE   Cardiac     Gastrointestinal   Infectious     Infectious   Infectious     n=312 878   Wasculoskeletal     Nervous system   Respiratory     SR: individual case safety poort, AE; adverse event, Aedian (quantile 1 - quantile 3)   Skin     Vascular   O% Estimated probabilities of serious AES   1     Infection AEs   Cordiac Coverts   0% Estimated probabilities of serious AES   1     Infection AEs   Cordiac AEs   Coverts   1   Frequently reported AEs:   COVID-19 (67.4%), Vaccination failure (46.6%)   2   Gender: Female (53.1%)   3   Age group: ≥ 75 years (21.4%)   4   Time to onset*: 85.5 days (16-149.5 days)   1     Infection AEs   Age group: ≥ 75 years (21.4%)   4. Time to onset*: 4 days (1-17 days)   3   Age group: 2/2/17 years (5.3%)   4. Time to onset*: 4 days (1-17 days)   1   Frequently reported AEs:   Dyspnoea (27.1%), Pulmonary embolism (14.8%)   2   Gender: Female (58.2%)   3. Age group: ≥ 75 years (17.3%)   4. Time to onset*: 4 days (1-17.5 days)   1   Frequently reported AEs:   Dyspnoea (27.1%), Pulmonary embolism (14.8%)   2   Gender: Female (58.2%)   3. Age group: 2 75 years (17.3%)   3. Age group: 2 75 years (17.3%)   3
serious AE   Gastrointestinal   Infectious     Injury, procedure   Musculoskeletal     Nervous system   Respiratory     Bit individual case safety   Skin     Vascular   0%     Estimitidual case safety   Skin     Vascular   0%     Estimitidual case safety   Skin     Vascular   0%     Estimitidual case safety   Skin     Vascular   0%     Estimated probabilities of serious AEs   1     Infection AEs   Skin     (43,606/13.9%)   Age group: 275 years (21.4%)     4. Time to onset*: 85.5 days (16-149.5 days)     1. Frequently reported AEs:     Myocarditis (25.0%), Pericarditis (14.7%)     2. Gender: Male (59.7%)     3. Age group: 12 <sup>-21</sup> 7 years (5.3%)     4. Time to onset*: 4 days (1-17 days)     1. Frequently reported AEs:     Dyspnoea (27.1%), Pulmonary embolism (14.8%)     2. Gender: Female (58.2%)     3. Age group: 2 75 years (17.3%)     4. Time to onset*: 4 days (1-17.5 days)     1. Frequently reported AEs:     Dyspnoea (27.1%), Pulmonary embolism (14.8%)     2. Gender: Female (58.2%)
Latent class analysis   infectious injury, procedure Musculoskeletal   infectious injury, procedure Musculoskeletal     n=312 878   Nervous system Respiratory   Nervous system Respiratory     sk; individual case safety port, AE; adverse event, Aedian (quantile 1 - quantile 3)   Skin     Vascular   0% Estimated probabilities of Serious AES 1     1   Frequently reported AEs: COVID-19 (67.4%), Vaccination failure (46.6%)     2. Gender: Female (53.1%)   3. Age group: 275 years (21.4%)     4. Time to onset*: 85.5 days (16-149.5 days)   1. Frequently reported AEs: COVID-19 (67.4%), Vaccination failure (46.6%)     2. Gender: Female (53.1%)   3. Age group: 275 years (21.4%)     4. Time to onset*: 85.5 days (16-149.5 days)   1. Frequently reported AEs : Myocarditis (25.0%), Pericarditis (14.7%)     2. Gender: Male (59.7%)   3. Age group: 12~17 years (5.3%)     4. Time to onset*: 4 days (1-17 days)   1. Frequently reported AEs : Dyspnoea (27.1%), Pulmonary embolism (14.8%)     2. Gender: Female (58.2%)   3. Age group: 27 years (17.3%)     4. Time to onset*: 4 days (1-17.5 days)   1. Frequently reported AEs: Headache (43.8%), Nausea (31.5%)     2. Gender: Female (69.5%)   3. Age group: 18~44 years (34.2%)
Cratic AEs   injury, procedure     Musculoskeletal   Nervous system     Nervous system   Respiratory     Skin   Vascular     Vascular   0% Estimated probabilities of Serious AEs 1     Infection AEs   3. Age group: 2 75 years (21.4%)     Infection AEs   3. Age group: 2 75 years (21.4%)     Infection AEs   3. Age group: 2 75 years (21.4%)     Infection AEs   Myocarditis (25.0%), Pericarditis (14.7%)     Infection AEs   Infection AEs     Infection AEs   Infection AEs     (43.606/13.9%)
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Nervous system RespiratoryNervous system Respiratoryar, individual case safety port, AE; adverse event, Aedian (quantile 1 - quantile 3)Nervous system RespiratoryImage: System (Aedian (quantile 1 - quantile 3)Skin VascularVascular0% Estimated probabilities of serious AEs 1Image: System (Aedian (quantile 1 - quantile 3)1. Frequently reported AEs: COVID-19 (67.4%), Vaccination failure (46.6%)Image: System (AEs) (43,606/13.9%)1. Frequently reported AEs: COVID-19 (67.4%), Vaccination failure (46.6%)Image: System (AEs) (43,606/13.9%)1. Frequently reported AEs : Myocarditis (25.0%), Pericarditis (14.7%)Image: System (AEs) (43,606/13.9%)1. Frequently reported AEs : Myocarditis (25.0%), Pericarditis (14.7%)Image: System (AEs) (43,606/13.9%)1. Frequently reported AEs : Dyspnoea (27.1%), Pulmonary embolism (14.8%)Image: System (AEs) (43,606/13.9%)1. Frequently reported AEs : Dyspnoea (27.1%), Pulmonary embolism (14.8%)Image: System (AEs) (43,606/13.9%)3. Age group: 275 years (17.3%)Image: System (AEs) (43,606/13.9%)1. Frequently reported AEs : Dyspnoea (27.1%), Pulmonary embolism (14.8%)Image: System (AEs) (43,606/13.9%)1. Frequently reported AEs : Dyspnoea (27.1%), Nausea (31.5%)Image: System (AEs) (43,606/13.9%)1. Frequently reported AEs: Dyspnoea (27.1%), Nausea (31.5%)Image: System (AEs) (3,606/13.9%)1. Frequently reported AEs: Dyspnoea (27.1%), Nausea (31.5%)Image: System (AEs) (3,606/13.9%)3. Age group: 18~44 years (34.2%)
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Ti-s12 8/8   Skin     SR; individual case safety   Skin     Vascular   0% Estimated probabilities of serious AEs 1     1   Frequently reported AEs 1     0% Octradic AEs (43,606/13.9%)   1. Frequently reported AEs 1     0% Octradic AEs (43,606/13.9%)   1. Frequently reported AEs 1     0% Octradic AEs (43,606/13.9%)   0. Seg group: > 75 years (17.3%)     1   . Frequently reported AEs 1     0% Octradic AEs (43,606/13.9%)<
Normatic case safety bort, AE; adverse event, Median (quantile 1 - quantile 3)   Vascular     Vascular   0% Estimated probabilities of serious AEs 1
Median (quantile 1 - quantile 3)   0% Estimated probabilities of serious AEs 1     0% Estimated pro
1   Frequently reported AEs: COVID-19 (67.4%), Vaccination failure (46.6%)     2. Gender: Female (53.1%)     3. Age group: ≥ 75 years (21.4%)     4. Time to onset*: 85.5 days (16-149.5 days)     1. Frequently reported AEs: (43,606/13.9%)     Cardiac AEs (43,606/13.9%)     Cardiac AEs (43,606/13.9%)     1. Frequently reported AEs : Myocarditis (25.0%), Pericarditis (14.7%)     2. Gender: Male (59.7%)     3. Age group: 12~17 years (5.3%)     4. Time to onset*: 4 days (1-17 days)     1. Frequently reported AEs : Dyspnoea (27.1%), Pulmonary embolism (14.8%)     2. Gender: Female (58.2%)     3. Age group: ≥ 75 years (17.3%)     4. Time to onset*: 4 days (1-17.5 days)     1. Frequently reported AEs: Dyspnoea (21.1%), Nausea (31.5%)     2. Gender: Female (69.5%)     3. Age group: 18~44 years (34.2%)
COVID-19 (67.4%), Vaccination failure (46.6%)     2. Gender: Female (53.1%)     3. Age group: ≥ 75 years (21.4%)     4. Time to onset*: 85.5 days (16-149.5 days)     4. Time to onset*: 85.5 days (16-149.5 days)     6. Gender: Male (59.7%)     2. Gender: Male (59.7%)     3. Age group: 12~17 years (5.3%)     4. Time to onset*: 4 days (1-17 days)     7. Frequently reported AEs : Myocarditis (27.1%), Pulmonary embolism (14.8%)     2. Gender: Female (58.2%)     8. Age group: ≥ 75 years (17.3%)     4. Time to onset*: 4 days (1-17.5 days)     1. Frequently reported AEs: Meadache (43.8%), Nausea (31.5%)     2. Gender: Female (69.5%)     3. Age group: 18~44 years (34.2%)
<b>Binection AEs</b> (43,606/13.9%)   2. Gender: Female (53.1%) <b>Infection AEs</b> (43,606/13.9%)   3. Age group: ≥ 75 years (21.4%) <b>Infection AEs</b> (43,606/13.9%)   1. Frequently reported AEs : Myocarditis (25.0%), Pericarditis (14.7%) <b>Cardiac AEs</b> (43,606/13.9%)   1. Frequently reported AEs : Myocarditis (25.0%), Pericarditis (14.7%) <b>Cardiac AEs</b> (43,606/13.9%)   1. Frequently reported AEs : Dyspnoea (27.1%), Pulmonary embolism (14.8%) <b>Respiratory/</b> vascular AEs (43,606/13.9%)   1. Frequently reported AEs : Dyspnoea (27.1%), Pulmonary embolism (14.8%) <b>Inferuently reported AEs</b> : Dyspnoea (27.1%), Pulmonary embolism (14.8%)   2. Gender: Female (58.2%) <b>Systemic AEs</b> 1. Frequently reported AEs: Headache (43.8%), Nausea (31.5%) <b>Systemic AEs</b> 1. Frequently reported AEs: Headache (43.8%), Nausea (31.5%) <b>Systemic AEs</b> 3. Age group: 18~44 years (34.2%)
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Tagging   Myocarditis (25.0%), Pericarditis (14.7%)     2. Gender: Male (59.7%)   3. Age group: 12~17 years (5.3%)     4. Time to onset*: 4 days (1-17 days)     8. Age group: 12~17 years (5.3%)     4. Time to onset*: 4 days (1-17 days)     9. Frequently reported AEs : Dyspnoea (27.1%), Pulmonary embolism (14.8%)     2. Gender: Female (58.2%)     3. Age group: ≥ 75 years (17.3%)     4. Time to onset*: 4 days (1-17.5 days)     1. Frequently reported AEs: Headache (43.8%), Nausea (31.5%)     2. Gender: Female (69.5%)     3. Age group: 18~44 years (34.2%)
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Tagged   Dyspnoea (27.1%), Pulmonary embolism (14.8%)     Respiratory/ vascular AEs (43,606/13.9%)   2. Gender: Female (58.2%)     3. Age group: ≥ 75 years (17.3%)     4. Time to onset*: 4 days (1-17.5 days)     Image: Systemic AEs Systemic AEs     Systemic AEs     3. Age group: 18~44 years (34.2%)
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Headache (43.8%), Nausea (31.5%)       Systemic AEs     3. Age group: 18~44 years (34.2%)
And State     Construction
Systemic AEs 3. Age group: 18~44 years (34.2%)
(25,529/ 8.2%) <b>4. Time to onset*:</b> 1 days (0-9 days)
1. Frequently reported AEs:
Headache (16.9%), Pyrexia (12.6%)
Systemic AEs     Age group: 18~44 years (30.9%)
<b>3. Age group:</b> 18~44 years (30.9%) (150,561/ 48.1%) <b>4. Time to onset*:</b> 2 days (1-12.5 days)
Conclusion Using latent class analysis (LCA), we found five clusters of serious AEs followin mRNA COVID-19 vaccines. Each cluster was distinguished by potential factors
such as age, gender, region, and time-to-onset. These findings could contribute
to enhancing understanding of safety profiles, and establishing management
the first of the state of the s
strategies for serious AE of special interests following mRNA COVID-19
vaccination.
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