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| **Table S1. Univariate and multivariate logistic regression model of use of perioperative antimicrobials for ovariohysterectomy and orchiectomy in dogs and cats and demographic data.** |
| **Use of preoperative antimicrobials in ovariohysterectomy in dogs** |
| **Variable** | **Use of antimicrobials**  | **Univariate** | **Multivariate** |
| **Low-frequency use (never, rarely, sometimes)** | **High- frequency use (usually and always)**  | **OR** | **95%CI Lower** | **95%CI upper** | **p-value** | **adjusted-OR** | **95%CI low** | **95%CI Upper** | **p-value** |
| **Gender** | Female | 128 | 167 | 1 |  - |
| Male | 103 | 137 | 1.02 | 0.72 | 1.44 | 0.91 |  - |
| **Surgical training**  | Non surgical postgraduate training  | 149 | 158 | 1 | 1 |
| Surgical postgraduate training | 82 | 146 | 1.68 | 1.18 | 2.38 | 0.004 | 1.65 | 1.14 | 2.38 | 0.008 |
| **Percentage dedicated to surgery in small animals in annual average (%)** | ≤75 | 211 | 260 | 1 |  - |
| >75 | 20 | 44 | 1.78 | 1.02 | 3.23 | 0.042 |  - |
| **Surgeons out of the total number of veterinarians in the center** | ≤2 | 152 | 162 | 1 |  - |
| >2 | 74 | 140 | 1.77 | 1.24 | 2.54 | 0.002 |  - |
| **Total number of vets** | ≤3 | 138 | 130 | 1 | 1 |
| >3 | 88 | 171 | 2.06 | 1.45 | 2.93 | <0.001 | 1.75 | 1.22 | 2.52 | 0.002 |
| **Years of experience** | ≤14 | 90 | 181 | 2.33 | 1.61 | 3.23 | <0.001 | 2.12 | 1.48 | 3.04 | 0.001 |
|  | >14 | 141 | 123 | 1 | 1 |
| **Use of postoperative antimicrobials in ovariohysterectomy in dogs** |
| **Variable** | **Use of antimicrobials**  | **Univariate** | **Multivariate** |
| **Low-frequency use (never, rarely, sometimes)** | **High- frequency use (usually and always)**  | **OR** | **95%CI Lower** | **95%CI Upper** | **p-value** | **adjusted-OR** | **95%CI low** | **95%CI Upper** | **p-value** |
| **Gender** | Female | 55 | 241 | 1.92 | 1.28 | 2.85 | 0.002 |  - |
| Male | 73 | 167 | 1 |  - |
| **Surgical training**  | Non surgical postgraduate training  | 51 | 256 | 2.56 | 1.7 | 3.84 | <0.001 | 2.20 | 1.43 | 3.45 | <0.001 |
| Surgical postgraduate training | 77 | 152 | 1 | 1 |
| **Percentage dedicated to surgery in small animals in annual average (%)** | ≤75 | 100 | 372 | 2.86 | 1.69 | 5.00 | <0.001 | 2.19 | 1.24 | 3.86 | 0.007 |
| >75 | 28 | 36 | 1 | 1 |
| **Surgeons out of the total number of veterinarians in the center** | ≤2 | 56 | 260 | 2.85 | 1.69 | 5.00 | <0.001 | 2.01 | 1.32 | 3.06 | 0.001 |
| >2 | 70 | 143 | 1 | 1 |
| **Total number of vets** | ≤3 | 49 | 220 | 1.88 | 1.26 | 2.85 | 0.002 |  - |
| >3 | 77 | 182 | 1 |  - |
| **Years of experience** | ≤14 | 66 | 205 | 1 |  - |
| >14 | 62 | 203 | 1.05 | 0.71 | 1.57 | 0.795 |  - |
| **Use of preoperative antimicrobials in ovariohysterectomy in cats** |
| **Variable** | **Use of antimicrobials**  | **Univariate** | **Multivariate** |
| **Low-frequency use (never, rarely, sometimes)** | **High- frequency use (usually and always)**  | **OR** | **95%CI Lower** | **95%CI Upper** | **p-value** | **adjusted-OR** | **95%CI low** | **95%CI Upper** | **p-value** |
| **Gender** | Female | 131 | 164 | 1.02 | 0.72 | 1.42 | 0.915 |  - |
| Male | 105 | 129 | 1 |  - |
| **Surgical training**  | Non surgical postgraduate training  | 150 | 154 | 1 | 1 |
| Surgical postgraduate training | 86 | 139 | 1.57 | 1.11 | 2.23 | 0.011 | 2.16 | 1.51 | 3.09 | <0.001 |
| **Percentage dedicated to surgery in small animals in annual average (%)** | ≤ 75 | 215 | 250 | 1 |  - |
| >75 | 21 | 43 | 1.76 | 1.01 | 3.06 | 0.045 |  - |
| **Surgeons out of the total number of veterinarians in the center** | ≤2 | 154 | 154 | 1 |  - |
| >2 | 77 | 137 | 1.78 | 1.24 | 2.54 | 0.002 |  - |
| **Total number of vets** | ≤3 | 142 | 119 | 1 | 1 |
| >3 | 89 | 170 | 2.28 | 1.60 | 3.25 | <0.001 | 2.16 | 1.51 | 3.09 | <0.001 |
| **Years of experience** | ≤ 14 | 90 | 178 | 2.5 | 1.78 | 3.57 | <0.001 |  - |
| >14 | 146 | 115 | 1 |  - |
| **Use of postoperative antimicrobials in ovariohysterectomy in cat** |
| **Variable** | **Use of antimicrobials**  | **Univariate** | **Multivariate** |
| **Low-frequency use (never. rarely. sometimes)** | **High- frequency use (usually and always)**  | **OR** | **95%CI Lower** | **95%CI Upper** | **p-value** | **adjusted-OR** | **95%CI low** | **95%CI Upper** | **p-value** |
| **Gender** | Female | 78 | 217 | 1.66 | 1.03 | 2.17 | 0.033 |  - |
| Male | 82 | 152 | 1 |  - |
| **Surgical training**  | Non surgical postgraduate training  | 67 | 235 | 2.44 | 1.67 | 3.57 | <0.001 | 2.44 | 1.67 | 3.57 | <0.001 |
| Surgical postgraduate training | 93 | 134 | 1 | 1 |
| **Percentage dedicated to surgery in small animals in annual average (%)** | ≤75 | 128 | 337 | 2.63 | 1.56 | 4.54 | <0.001 | 2.12 | 2.21 | 3.70 | <0.001 |
| >75 | 32 | 32 | 1 | 1 |
| **Surgeons out of the total number of veterinarians in the center** | ≤2 | 76 | 232 | 1.85 | 1.26 | 2.70 | 0.001 |  - |
| >2 | 81 | 133 | 1 |  - |
| **Total number of vets** | ≤3 | 64 | 197 | 1.72 | 1.16 | 2.5 | 0.006 |  - |
| >3 | 92 | 167 | 1 |  - |
| **Years of experience** | ≤14 | 88 | 178 | 1 |  - |
| >14 | 72 | 191 | 1.31 | 0.90 | 1.90 | 0.154 |  - |
| **Use of preoperative antimicrobials in orchiectomy in dogs** |
| **Variable** | **Use of antimicrobials**  | **Univariate** | **Multivariate** |
| **Low-frequency use (never. rarely. sometimes)** | **High- frequency use (usually and always)**  | **OR** | **95%CI Lower** | **95%CI Upper** | **p-value** | **adjusted-OR** | **95%CI low** | **95%CI Upper** | **p-value** |
| **Gender** | Female | 145 | 156 | 1.03 | 0.73 | 1.44 | 0.853 |  - |
| Male | 119 | 124 | 1 |  - |
| **Surgical training**  | Non surgical postgraduate training  | 160 | 152 | 1 |  - |
| Surgical postgraduate training | 104 | 128 | 1.29 | 0.92 | 1.82 | 0.137 |  - |
| **Percentage dedicated to surgery in small animals in annual average (%)** | ≤75 | 175 | 146 | 1 |  - |
| >75 | 84 | 132 | 1.39 | 0.82 | 2.37 | 0.222 |  - |
| **Surgeons out of the total number of veterinarians in the center** | ≤2 | 106 | 216 | 1 |  - |
| >2 | 87 | 128 | 1.88 | 1.33 | 2.67 | <0.001 |  - |
| **Total number of vets** | ≤3 | 158 | 118 | 1 | 1 |
| >3 | 101 | 159 | 2.10 | 1.49 | 2.98 | <0.001 | 1.92 | 1.35 | 2.74 | <0.001 |
| **Years of experience** | ≤14 | 103 | 174 | 2.56 | 1.81 | 3.57 | <0.001 | 2.34 | 1.65 | 3.34 | <0.001 |
| >14 | 161 | 106 | 1 | 1 |
| **Use of postoperative antimicrobials in orchiectomy in dogs** |
| **Variable** | **Use of antimicrobials**  | **Univariate** | **Multivariate** |
| **Low-frequency use (never. rarely. sometimes)** | **High- frequency use (usually and always)**  | **OR** | **95%CI Lower** | **95%CI Upper** | **p-value** | **adjusted-OR** | **95%CI low** | **95%CI Upper** | **p-value** |
| **Gender** | Female | 98 | 204 | 1.42 | 1.00 | 2.00 | 0.052 |  - |
| Male | 98 | 144 | 1 |  - |
| **Surgical training**  | Non surgical postgraduate training  | 166 | 150 | 2.08 | 1.45 | 2.94 | <0.001 | 1.89 | 1.30 | 2.70 | <0.001 |
| Surgical postgraduate training | 106 | 126 | 1 | 1 |
| **Percentage dedicated to surgery in small animals in annual average (%)** | ≤75 | 159 | 321 | 2.77 | 1.63 | 4.47 | <0.001 | 2.32 | 1.35 | 4.00 | 0.002 |
| >75 | 37 | 27 | 1 | 1 |
| **Surgeons out of the total number of veterinarians in the center** | ≤2 | 106 | 216 | 1.39 | 0.97 | 2.03 | 0.075 |  - |
| >2 | 87 | 128 | 1 |  - |
| **Total number of vets** | ≤3 | 89 | 185 | 1.35 | 0.94 | 1.92 | 0.100 |  - |
| >3 | 103 | 159 | 1 |  - |
| **Years of experience** | ≤14 | 105 | 170 | 1 |  - |
| >14 | 91 | 178 | 1.21 | 0.85 | 1.71 | 0.291 |  - |
| **Use of preoperative antimicrobials in orchiectomy in cats** |
| **Variable** | **Use of antimicrobials**  | **Univariate** | **Multivariate** |
| **Low-frequency use (never. rarely. sometimes)** | **High- frequency use (usually and always)**  | **OR** | **95%CI Lower** | **95%CI Upper** | **p-value** | **adjusted-OR** | **95%CI low** | **95%CI Upper** | **p-value** |
| **Gender** | Female | 152 | 151 | 1 |  - |
| Male | 121 | 124 | 1.03 | 0.74 | 1.44 | 0.856 |  - |
| **Surgical training**  | Non surgical postgraduate training  | 168 | 148 | 1 |  - |
| Surgical postgraduate training | 105 | 127 | 1.37 | 0.98 | 1.93 | 0.068 |  - |
| **Percentage dedicated to surgery in small animals in annual average (%)** | ≤75 | 251 | 233 | 1 | 1 |
| >75 | 22 | 42 | 2.05 | 1.19 | 3.55 | 0.01 | 2.31 | 1.32 | 4.04 | 0.003 |
| **Surgeons out of the total number of veterinarians in the center** | ≤2 | 177 | 148 | 1 |  - |
| >2 | 90 | 126 | 1.67 | 1.18 | 2.37 | 0.04 |  - |
| **Total number of vets** | ≤3 | 156 | 122 | 1 |  - |
| >3 | 112 | 149 | 1.70 | 1.21 | 2.40 | 0.002 |  - |
| **Years of experience** | ≤14 | 113 | 164 | 2.08 | 1.49 | 2.94 | <0.001 | 2.22 | 1.56 | 3.12 | <0.001 |
| >14 | 160 | 111 | 1 | 1 |
| **Use of postoperative antimicrobials in orchiectomy in cats** |
| **Variable** | **Use of antimicrobials**  | **Univariate** | **Multivariate** |
| **Low-frequency use (never. rarely. sometimes)** | **High- frequency use (usually and always)**  | **OR** | **95%CI Lower** | **95%CI Upper** | **p-value** | **adjusted-OR** | **95%CI low** | **95%CI Upper** | **p-value** |
| **Gender** | Female | 163 | 141 | 1.35 | 0.96 | 1.92 | 0.080 |  - |
| Male | 149 | 95 | 1 |  - |
| **Surgical training**  | Non surgical postgraduate training  | 166 | 148 | 1.47 | 1.05 | 2.08 | 0.026 | 1.45 | 1.02 | 2.08 | 0.040 |
| Surgical postgraduate training | 146 | 88 | 1 |  - |
| **Percentage dedicated to surgery in small animals in annual average (%)** | ≤75 | 268 | 216 | 1.78 | 1.02 | 3.12 | 0.044 |  - |
| >75 | 44 | 20 | 1 |  - |
| **Surgeons out of the total number of veterinarians in the center** | ≤2 | 178 | 148 | 1.25 | 0.88 | 1.78 | 0.215 |  - |
| >2 | 129 | 86 | 1 |  - |
| **Total number of vets** | ≤3 | 144 | 134 | 1.51 | 1.07 | 2.12 | 0.016 | 1.44 | 1.02 | 2.04 | 0.043 |
| >3 | 162 | 99 | 1 | 1 |
| **Years of experience** | ≤14 | 156 | 120 | 1.04 | 0.73 | 0.73 | 0.844 |  - |
| >14 | 156 | 116 | 1 |  - |