INTERACTIONS OF COUGH AND OTHER DEFENSIVE AIRWAY REFLEXES – ACCIDENTAL OR
REGULAR RESPONSES

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Defensive behaviors from the airways are frequently antagonistic to cough. The occurrence and
sequencing of airway motor responses is well coordinated. The data were gathered by mechanical
probing of various airway segments in anesthetized cats. The characteristics of tracheobronchial
cough when other motor behavior occurred and under control were compared. Rhythmic behaviors
of sneezing and swallowing order between coughs being induced simultaneously – phase
preference in the passive expiratory cough phase with its prolongation. Short-lasting and
non-rhythmic responses of aspiration and expiration reflex superimpose over executed cough –
interposition of reflex within the cough motor pattern with no temporal changes. The series of
aspiration reflexes before coughing or within the quiescent expiratory phase of cough resulted in
reduced number of cough responses. Cough motor drives increased with aspiration reflexes within
the cough inspiration, after the introduction of the swallow and with expiration reflexes in either
phase of cough. Concomitant sneeze reflexes increased cough expiratory motor drive. The complex
central interactions and sequencing of airway motor acts may result in the disruption of coughing or
in the enhancement of cough. Tested stimulation paradigms that modify coughing might correct
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