

Johns Hopkins University: Registration number: 51-R-0006

USDA Annual Report Year 2020

Column E Explanation

20 piglets

Necrotizing enterocolitis (NEC) is the leading cause of death in premature infants. Discovering new treatment or preventative therapies such dietary manipulations for NEC is clearly of major benefit to the society. Premature piglets were induced to develop experimental NEC by gavage feeds at 20ml/kg every 3 hours x 6 feeds/day.

Animals will be carefully monitored throughout this protocol. However, we expect them to get NEC, which can cause progressive necrosis of the intestine. There are rare instances where the piglets suffer a gradual deterioration in their hemodynamic status due to the development of sepsis. Where the piglet is clearly suffering, we would immediately euthanize. There are rare instances where the piglet sustains a rapid deterioration, much like in the human situation, and in these cases, it is difficult to administer analgesics without hastening an early death. In these instances, it can also be difficult to discern whether the piglet has progressive NEC, or may be suffering from dehydration due to volume loss due to diarrhea, and which would not be expected to cause pain. Under these circumstances, pre-emptive analgesic would be detrimental, and lead to progressive hypotension. For these reasons, we avoid administering analgesia to avoid inducing further hypotension and toxicity, and elect to euthanize when distress is evident.