

Table 3: Outline of the key points from our review of the literature surround the relationship between chronobiology and aortic aneurysm

KEY POINTS

- Over 6,000 deaths in England and 175,000 deaths globally are caused by aortic aneurysm (AA) rupture each year.
- Incidence of AA rupture, like other cardiovascular pathologies, may be subject to chronobiological rhythms (circadian and seasonal rhythms).
- Physiological mechanisms, such as surges in blood pressure and plasma catecholamines, that occur upon waking are thought to contribute to higher incidence of AA rupture in the morning that at other times of the day.
- Response mechanisms to colder climate, such as increased blood pressure, heart rate, haematocrit, and systemic vascular resistance are thought to contribute to higher incidence of AA rupture in the winter months.
- The circadian and seasonal influences on AA rupture are potentially exacerbated by vitamin D deficiency and genetic factors, in particular Marfan Syndrome.
- Adopting chrono-therapeutic approaches to long-term management may reduce the risk of AA rupture by attenuating circadian and seasonal factors that may aggravate AA rupture.