

CLINICAL CASE ΚΛΙΝΙΚΗ ΠΕΡΙΠΤΩΣΗ

Papal deaths caused by cardiorenal disease First approach

We know a lot on the history of the Roman Pontiffs, we know enough about their diseases and their deaths. By contrast, we have scarce data on cardiorenal deaths. The aim of this paper is to provide the preliminary results of a study that up to now includes 83 out 264 popes. An additional 40 popes reigning in the years 1700–2019 have been studied only as to their mean ages at death. Sixteen died of gout and its renal complication, 6 because kidney and bladder stones, 4 had nephritis, 4 disease of the prostate, 1 gonorrhoea, 1 syphilis, 1 died of crush syndrome. Nine popes died of stroke, 6 underwent cardiac deaths. Nine popes were murdered, 26 martyred. Among the 38 popes who died between 1700 and 1999, the average mean age at death was 75.05 years, for popes who died in the years 1700–1799 it was 77.8 years, for popes who died between 1800 and 1899, and 78.1 years for popes who died between 1900 and 1999. The two living popes (Benedict XVI, emeritus and Francis, reigning) are 92 and 82 years old, respectively. The majority of popes aged successfully and lived longer than their contemporaries. In Italy, in the 17th century, the mean age at death was below 40 years.

1. INTRODUCTION

The lives of Roman Pontiffs are interesting from a historical and historiographic point of view.¹ The abundance of documents not only in the Vatican but everywhere in Europe makes popes a great topic of studies but all have been extensively studied by historians and a vast literature exists.^{1–5} By contrast, few specific studies exist on their diseases and causes of death, even though a lot has been written about the popes' physicians, starting with Giovanni Castellomata.^{6,7} The latter was the archiater (*medicus papae*) of Pope Innocent III (1161–1216), born Lothar of Segni, who reigned from 8 January 1198 to 16 July 1216. The topic of papal diseases was recently addressed by Agostino Paravicini Bagliani,⁸ Giovanni Ceccarelli⁹ and Giorgio Cosmacini.¹⁰

Cardiorenal diseases are primary and important causes of death today. No study of their prevalence in popes is available. The goal of this study is to explore the prevalence of cardiorenal deaths among popes, who are usually elected to office at advanced age and enjoy successful ageing.

2. POPES WHO DIED OF GOUT AND ITS COMPLICATIONS

Table 1 lists popes who died of gout and its complication (tab. 1), among them Boniface VIII, Sixtus IV and Clement VIII. Pope Boniface founded the University of Rome (*Studium Urbis*, 6 June 1303) without suppressing the *Studium curiae* (the university of the Pope's Court, a university located in the places where the court was settled, thus following the popes in their travels). Sixtus started the Hospital Santo Spirito, the Vatican Library and the Sistine Chapel. Pope Clement VIII sentenced Giordano Bruno to death.

Boniface VIII (Pope in 1283–1303) was born Benedetto Caetani at Anagni (c.1230). He was elected Pope after the withdrawal of Celestine V, and is considered one of the greatest popes in history, although Dante Alighieri accused him of simony and nepotism. "He was chronically affected by gout and renal stone disease and by the fear of death and the search for therapies capable to prolong life. Cosmacini says "podagroso e gottoso... the Pope is affected by arthritis and renal disease due to overalimantation of

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N.G. De Santo,¹
C. Bisaccia,²
L.S. De Santo³

¹University of Campania Luigi Vanvitelli,
Naples

²Mazzini Institute, Naples

³Division of Heart Surgery, University of
Campania Luigi Vanvitelli, Naples, Italy

Οι θάνατοι Παπών που προήλθαν
από καρδιονεφρικές νόσους:
Πρώτη προσέγγιση

Περίληψη στο τέλος του άρθρου

Key words

Cardiovascular deaths
Diseases of the popes
Gout
Kidney and bladder stones
Renal deaths
Stroke
Successful aging

Table 1. Popes who died of gout and its complications.

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| Sisinnius, born c.650 in Syria, Pope for 21 days in 708 |
| Honorius IV, born in Rome in 1210, Pope in 1285–1287 |
| Boniface VIII, born c.1230, Pope in 1294–1303 |
| Pius II, born Enea Piccolomini in 1405, Pope in 1458–1464 |
| Sixtus IV, born Francesco della Rovere in 1414, Pope in 1471–1474 |
| Pius III, born in 1440, Pope for 16 days in 1503 |
| Julius II, born Giuliano della Rovere in 1443, Pope in 1503–1516 |
| Julius III, born in 1481, Pope in 1550–1555 |
| Clement VIII, born Ippolito Aldobrandini, Pope in 1592–1605 |
| Clement X, born Emilio Bonaventura Altieri in 1581, Pope in 1670–1676 |
| Innocent XI, born in the family Odescalchi at Como in 1681, Pope in 1676–1689 |
| Innocent XII, born Antonio Pignatelli di Spinazzola in 1615, Pope in 1691–1700 |
| Innocent XIII, born Michelangelo Conti a Poli (Vatican State) in 1655, Pope in 1721–1724 |
| Clement XI, born in Urbino as Gianfrancesco Albani in 1649, Pope in 1700–1721 |
| Benedict XIV, born Prospero Lorenzo Lambertini in 1765, Pope in 1740–1758 |
| Pius VIII, born Francesco Saverio Castiglioni near Ancona in 1761, Pope in 1829–1830 |

food very rich (*straricca*) in meat".¹¹ He had great interest in Roger Bacon's theories on *De retardatione accidentium senectutis* (*On retarding the accidents of ageing*). Boniface enrolled various archiaters, among them Taddeo Alderotti (1223–1295), Pietro da Abano (1257–1315), Anselmo da Bergamo (*artis physicae professor*), Simone of Genova (author of *Clavis sanationis*), Accursino from Pistoia, Manzia from Fabriano, Guglielmo da Brescia, Angelo da Camerino and Campano da Novara (*Magister Campanus*), a naturalist also affected by renal stone disease.

Pope Boniface VIII was the founder of the Holy Year in 1300 and author of the *Bulla detestandi feritatis* (against the dismemberment and evisceration of cadavers) issued on 27 September 1299). For this *Bulla* during the subsequent centuries he was wrongly accused even by Herman Boerhaave and Albrecht von Haller to have delayed the advancement of medicine by impeding anatomy. This was a misinterpretation since a special permission was granted for teaching purposes.

Sisto IV (1471–1484), born Francesco della Rovere in 1414, suffered of a disease affecting his joints, probably gout, and died following apoplexy. He is remembered for the splendour of the Sistine Chapel (he enrolled Verrocchio,

Botticelli, Pinturicchio, Perugino, Ghirlandaio, Melozzo). He also promoted the foundation of the Hospital Santo Spirito and the development of the Vatican Library (he nominated as its director the famous Bartolomeo Sacchi, known as Platina – as shown by a painting by Melozzo in the Vatican Museum). He also renamed the Jubilee 1475 as Holy Year (*Anno Santo*). Sisto IV wrote an important short apostolic letter (*littera in forma brevis*) to the President of the University of Tubingen, who had inquired about the possibility of utilising the bodies of executed people for teaching anatomy. As Professor Cosmacini demonstrated¹² "we give you permission to utilise the corpses from those places where those persons were executed, to dissect them and to dismember them and thereafter to give them back to be buried" [according to the rules and tradition of the Church] (4 April 1582).

Clemente VIII (1592–1605), born Ippolito Aldobrandini, was the pope who convicted Giordano Bruno. In 1597, he continually suffered from gout attacks. In 1598, in a travel note, he wrote "nos quidem in ipso itinere chiragra et podagra liquanto tentati sumus/in that travel we suffered of Chiragra and podagra".¹³ He also had gouty arthritis in his hands and feet. Crippling arthritis was associated with nephritis. His pallor makes a diagnosis of chronic kidney disease probable. His physician prescribed that he drinks a lot. In his last months, he had various attacks of "podagra, with insomnia and lack of appetite". In January 1605, he suffered "mal di goccia" (cerebral haemorrhage).

3. POPES WHO DIED BECAUSE OF KIDNEY OR BLADDER STONES

Table 2 shows that six popes died of kidney or bladder stones (Boniface IX, Gregory XV, Clement IX, Pius V, Pius VI and Leo XII).

Boniface IX "afflitto da mal della pietra morì/died of renal stone disease". The final cause was a stroke. Autopsy found a stone in his bladder.¹⁴ In Platina we read "Boniface who had complained of long-lasting flank pain, finally died".¹⁵

Gregory XV became pope at the age of 67. He canonised

Table 2. Popes who died of bladder and kidney stones.

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| Boniface IX (Pope 1389–1404), born Piero Tomacelli |
| Pious VI (Pope 1775–1799), born Giovann'Angelo Braschi |
| Gregory XV (Pope 1621–1623), born Alessandro Ludovisi |
| Clement IX (Pope 1667–1669), born Giulio Rospigliosi |
| Pious V (Pope 1566–1572) born Michele Ghisleri in 1504 |
| Leo XII (Pope 1823–1829), born Annibale Della Genga |

Teresa d'Avila, Francesco Xavier, Filippo Neri and Ignatius of Loyola and in 1522 founded the institution known as *De propaganda Fide*, giving the congregation a great palace, known as the ministry of missions. He suffered from renal stone disease, fever, nausea and vomiting. Having luckily passed the stone he died of acute sepsis and diarrhoea, aged 70.

At autopsy, Pius V's three stones were found complicated by urinary sepsis. Pius VI died aged 82 in Valence, France. He was the last pope to have died abroad. The narratives about his death report strangury, repeated bladder catheterisations and bloody urine.

The death of Leo XII was also associated with strangury and haematuria.

4. POPES WHO DIED OF NEPHRITIS, PROSTATE DISEASE, GONORRHOEA AND SYPHILIS

Four popes had nephritis: Marcellus II (1501–1545) Pope for 22 days, Hadrian VI (born in 1459 in Utrecht, Pope in 1522–1523), Clement X (born in 1591, Pope in 1670–1676), Pius VII (born in Cesena in 1742, Pope in 1800–1823).

Clement XI (born in Urbino in 1649, Pope in 1700–1721), Pius VII, Paul VI, John Paul II had prostate disease. Clement VI, Pope in Avignon, had severe gonorrhoea, while Julius II had syphilis.

5. CARDIAC DEATHS AND DEATH DUE TO STROKE

There were a few cardiac deaths: Clement XIII, Pope in 1758–1769 (he suffered of angina and died of an aortic aneurysm), Pius X (born in 1835 in Riese, Pope in 1903–1914), Pius XI (born in 1857 as Achille Ratti), Paul VI (born Giovan Battista Montini in 1897 in Concesio, Pope in 1953–1978), John Paul I (born Albino Luciani in 1912, pope for 33 days in 1978).

John Paul II was Pope in the years 1978–2005, having been born Karol Józef Wojtyła, in Wadowice in 1920 and died aged 86. According to Archiater Buzzonetti, his death was due to "Parkinson's disease, acute respiratory syndrome and tracheotomy, benign prostatic hyperplasia, hypertensive cardiopathy and ischemia".

Many popes died of a stroke. Among them Stephen II (Pope in 752–757), Sergius (Pope in 884–887), John XII (Pope in 955–964), Nicholas III (Pope in 1277–1280), Honorius IV (Pope in 1295–1297), Innocent VI (Pope in 1406), Martin V (Pope in 1431), Paul II (Pope in 1471), Clement XIII (Pope in 1758–1769).

Pope John XXI, born Pietro Hispano about 1205–1210,

was Pope in 1276–1277. He died of crush syndrome. In the night of 10 August 1277, the ceiling of his office fell and he was severely injured. Although he was extracted alive from the rubble, he died a few days later.

6. DISCUSSION

6.1. Ageing well as a cause of death

In general, all Popes' age at death is higher than that of contemporary laymen. Celestine V, who refused the tiara, died aged 81 in prison. Pope Innocent XII was 85, John Paul II was nearly 86, Clement X was 86, Pius IX was 87 and died after 31 years of reign, Leo XIII was 93 and died after 25 years of reign. He was a frugal eater, drank two fingers of Bordeaux wine a day, sniffed tobacco, and was a regular walker in the Vatican Gardens.

Table 3, which is a compilation of age at death of popes who died in the XVII-XX centuries, demonstrates that popes enjoyed greater longevity than their contemporaries, thanks to their lifestyle, including good nutrition. Even in the XVII century, when male life expectancy in Italy was around thirty-five years, the mean age at death of popes was 75.

6.2. Martyrium

Many popes, especially in the early years of Christianity, were martyred. Table 4 accurately lists the 26 martyred popes, most belonging to the early church. St Peter, founder of the patriarchate of Antiochia, died in Rome by crucifixion. Linus was martyred in 78 AD, St. Clement thrown into the sea with an anchor around his neck, St Anacletus was martyred in 110 AD.

Nine popes were murdered: John VIII, Stephen VI, Leo V, John X, John XII, Benedict VI, John XIV, Clement II, Celestine V (tab. 5). It is uncertain if Boniface VIII died because of the attack in Anagni.

6.3. Crush syndrome

John XXI (1276–1277), born Peter Julianus in 1215, was identified with Petrus Hispanus, the author of a treatise *De Oculo* and physician to Pope Gregory IX (1271–1276). He was given a place of honour by Dante Alighieri in the sphere of the sun (*Divine Comedy*). He died of crush syndrome after the ceiling of his office fell.

Sifridus de Balnhusin (*Compendium historiarum Movimenta Germaniae Historica, Scriptorum*, 1880 XXV, 708) wrote "subito domus in qua sedebat super eum corruit tantumque concussit ut infra spatium quinque dierum

Table 3. Lifespan of popes who died in the XVII, XVIII, XIX and XX centuries.

| Pope | Dates of birth and death | Age (years) | |
|-------------------------|--------------------------|-------------|------------------|
| <i>XVII Century</i> | | | |
| Clement VIII | 1536/1605 | 69 | |
| Leo XI | 1535/1605 | 70 | |
| Paul V | 1552/1621 | 69 | |
| Gregory XV | 1554/1623 | 69 | |
| Urban VIII | 1568/1644 | 76 | |
| Innocent X | 1574/1655 | 81 | |
| Alexander VII | 1599/1667 | 68 | |
| Clement IX | 1600/1669 | 69 | |
| Clement X | 1590/1676 | 86 | |
| Innocent XI | 1611/1689 | 78 | |
| Alexander VIII | 1619/1691 | 81 | |
| Innocent XII | 1615/1700 | 85 | <i>Mean 75.0</i> |
| <i>XVIII Century</i> | | | |
| Innocent XII | 1615/1700 | 85 | |
| Clement XI | 1649/1721 | 71 | |
| Innocent XIII | 1655/1724 | 70 | |
| Benedict XIII | 1649/1730 | 82 | |
| Clement XII | 1652/1740 | 87 | |
| Benedict XIV | 1675/1758 | 83 | |
| Clement XIII | 1693/1769 | 76 | |
| Clement XIV | 1705/1774 | 69 | <i>Mean 77.8</i> |
| <i>XIX Century</i> | | | |
| Pious VI | 1717–1800 | 83 | |
| Pious VII | 1742–1823 | 81 | |
| Leo XII | 1760/1829 | 69 | |
| Pious VIII | 1761–1830 | 70 | |
| Gregory XVI | 1765–1846 | 81 | |
| Pious IX | 1792/1878 | 85 | <i>Mean 78.1</i> |
| <i>XX Century</i> | | | |
| Leo XIII | 1810/1903 | 93 | |
| Pious X | 1835/1914 | 79 | |
| Benedict XIV | 1854/1922 | 67 | |
| Pious XI | 1857/1839 | 81 | |
| Pious XII | 1876/1958 | 82 | |
| John XXIII | 1881/1963 | 82 | |
| Paul VI | 1887/1968 | 81 | |
| John Paul I | 1912/1978 | 65 | |
| John Paul II | 1920/2005 | 84 | <i>Mean 79.3</i> |
| <i>XXI Century</i> | | | |
| Benedict XVI (emeritus) | Born 1927 | 92 | |
| Francis | Born 1936 | | |

Table 4. Martyred Popes (no 26).

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|---|
| Saint Peter, c.67, martyred by crucifixion |
| Pope Linus, c.67–c.76 |
| Pope Clement I (c.92–c.99), thrown into sea with anchor around his neck |
| Pope Telesphorus (c.128–c.138) |
| Pope Soter (166–175) |
| Pope Anicetus (166–176) |
| Pope Eleuterius (175–189) |
| Pope Victor I (189–199) |
| Pope Calixtus I (217–222) |
| Pope Urban I (222–230) |
| Pope Pontian (230–235), condemned to mines in Sardinia, died on the Island of Tavolara |
| Pope Anterus (elected 21/12/235), martyred by Emperor Maximus |
| Pope Fabian (elected 11/10/236), martyred in 1/20/250 during persecution by Decius |
| Pope Cornelius (elected March 253), martyred in June 253 |
| Pope Lucius (elected 6/25/253), martyred 3/5/254 |
| Pope Stephen I (elected 5/12/254), martyred 8/2/257 |
| Pope Sixtus II (elected 8/30/257), martyred 8/6/258 |
| Pope Eutychian (elected 1/4/275), martyred 12/7/283 |
| Pope Felix (elected 5/1/269), martyred 12/30/274 |
| Pope Caius (elected 12/17/238), martyred 4/22/296 |
| Pope Dionysius (elected 7/22/259), martyred 12/26/268 |
| Pope Marcellinus (elected 6/30/296) martyred 10/25/304 |
| Pope Marcellus (elected 5/27/308), martyred 1/16/309 |
| Pope Eusebius (elected 4/18/309), martyred in Sicily 8/17/309 |
| Pope John I (elected August 13, 523). Imprisoned by Theodoric and starved to death (5/18/526) |
| Pope Martin (elected in 649), died in exile on 9/16/655 |

Table 5. Murdered Popes (no 9).

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| John VIII (872–882): Allegedly poisoned and then clubbed to death |
| Stephen VI (896–897): Strangled |
| Leo V (903): Allegedly strangled |
| John X (914–928): Allegedly smothered with pillow |
| John XII (955–964): Allegedly murdered by the jealous husband of the woman with whom he was in bed |
| Benedict VI (973–974): Strangled |
| John XIV (983–984): Either by starvation, ill-treatment or direct murder |
| Clement II (1046–1047): Allegedly poisoned |
| Celestine V (1294–1296): Allegedly (unlikely) murdered while in post-abdication captivity; allegations blame his successor Boniface VIII |

miserabiliter moreretur" (Agostino Paravicini Bagliani, *The Pope's Body*, 1994).

7. CONCLUSIONS

Cardiovascular and renal deaths were frequent among

popes. Renal stone disease with or without gout was frequent. These preliminary findings warrant further studies; however, they point out that these narratives add another perspective to the popes' contribution to Medical Milieu, not only as founders of universities,¹⁰ protectors of anatomists,⁷ and enrollers of archiaters,^{3,6} but also as patients.

ΠΕΡΙΛΗΨΗ

Οι θάνατοι Παπών που προήλθαν από καρδιονεφρικές νόσους: Πρώτη προσέγγιση

N.G. DE SANTO,¹ C. BISACCIA,² L.S. DE SANTO³

¹University of Campania Luigi Vanvitelli, Naples, ²Mazzini Institute, University of Campania Luigi Vanvitelli, Naples, ³Division of Heart Surgery, University of Campania Luigi Vanvitelli, Naples, Italia

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Γνωρίζουμε πολλά για την ιστορία των Ρωμαίων Ποντιφικών, γνωρίζουμε αρκετά για τις ασθένειες και τους θανάτους τους. Αντίθετα, διαθέτουμε ελάχιστα δεδομένα για καρδιοαναπνευστικούς θανάτους. Σκοπός της παρούσας εργασίας είναι να παράσχει τα προκαταρκτικά αποτελέσματα μιας μελέτης που μέχρι τώρα περιλαμβάνει 83 από 264 Πάπες, 40 ακόμα Πάπες που ηγεμόνευσαν κατά τα έτη 1700–2019 έχουν μελετηθεί μόνο ως προς τις μέσες ηλικίες τους κατά τον θάνατο. Δεκαέξι πέθαναν από ουρική αρθρίτιδα και νεφρική επιπλοκή, 6 από λίθους στους νεφρούς και την ουροδόχο κύστη, 4 είχαν νεφρίτιδα, 4 ασθένειες του προστάτη, 1 από γονόρροια, 1 από σύφιλη, 1 πέθανε από σύνδρομο σύνθλιψης. Εννέα Πάπες πέθαναν από αγγειακό εγκεφαλικό επεισόδιο, 6 από καρδιακού θανάτους. Εννέα Πάπες δολοφονήθηκαν, 26 μαρτύρησαν. Μεταξύ των 38 Παπών που πέθαναν από το 1700 έως το 1999, η μέση ηλικία κατά τον θάνατο ήταν 75,05 χρόνια για τους Πάπες που πέθαναν κατά τα έτη 1700–1799, 77,8 χρόνια για τους Πάπες που πέθαναν μεταξύ 1800 και 1899, 78,1 χρόνια για τους Πάπες που πέθαναν μεταξύ 1900 και 1999. Οι δύο ζωντανοί Πάπες (Βενέδικτος ΙΣΤ΄, επίτιμος και Φραγκίσκος, ο νυν Πάπας) είναι 92 και 82 ετών, αντίστοιχα. Η πλειοψηφία των Παπών κατάφερε να φτάσει σε μεγάλη ηλικία και έζησε περισσότερο από τους συγχρόνους τους. Στην Ιταλία, τον 17ο αιώνα, η μέση ηλικία θανάτου ήταν κάτω των 40 ετών.

Λέξεις ευρητηρίου: Αγγειακό εγκεφαλικό επεισόδιο, Θάνατοι λόγω νεφρών, Καρδιαγγειακοί θάνατοι, Λίθοι στους νεφρούς και την ουροδόχο κύστη, Μεγάλη ηλικία επιτυχώς, Ουρική αρθρίτιδα, Παθήσεις Παπών

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Corresponding author:

N.G. De Santo, Via Pansini 5, Policlinico, Pad 17, Nephrology, 80131 Naples, Italy
e-mail: nataleg.desanto@unicampania.it