

Study of leukaemia and lymphoma mortality near Vatican radio transmitter

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This is a report of a study of mortality from leukaemia and lymphoma in adults and children in relation to proximity to two radio transmitters: the structures at Radio Vaticana and at MariTele, near Rome (see page 12 of the Report for the exact locations).

Conclusions:

1. Adult mortality near Radio Vaticana (pages 44 – 59)

- (i) For those exposed for at least 10 years between 5 and 9 km from the antennae in both women and men of all ages, the mortality risk from leukaemia and lymphoma combined, adjusted for age, gender, smoking, occupation, and proximity to the MariTele antennae was significant, OR = 3.12, 95% CI = 1.00 – 9.69.
- (ii) For those exposed for at least 10 years between 5 and 9 km from the antennae in women only of all ages, the mortality risk from leukaemia and lymphoma combined, adjusted for age, gender, smoking, occupation and proximity to the MariTele antennae was significant, OR = 4.79, 95% CI = 1.04 – 21.91.
- (iii) For those exposed for at least 10 years between 5 and 9 km from the antennae in both women and men over age 21, the mortality risk from leukaemia and lymphoma combined, adjusted for age, gender, smoking, occupation and proximity to the MariTele antennae was significant, OR = 3.44, 95% CI = 1.05 – 11.27.
- (iv) For those exposed for at least 10 years between 6 and 12 km from the antennae in both women and men of all ages, the mortality risk from the analysis of pathology relating only to leukaemia, adjusted for age, gender,

smoking, occupation and proximity to the MariTele antennae was significant, OR = 6.69, 95% CI = 1.45 – 30.78. This is based on relatively small numbers, but the finding suggests that the mortality risk related only to those with leukaemia.

- (v) In all the analyses conducted, excess risk was detected up to 12 km from the antennae, but there was a lack of evidence of risk for exposed adults living <5 km from the antennae (details in the body of the report)

Overall, the findings indicate a statistically significant association between exposure to the Radio Vaticana antennae and mortality from leukaemia in adults.

2. Antennae structure at MariTele (pages 73 – 86)

In contrast to the above findings for Radio Vaticana, the evidence did not support an association between leukaemia or lymphoma mortality and proximity to the antennae structure at MariTele. However, the possibility of risk cannot be excluded.

3. Childhood leukaemia and lymphoma (ages 0 – 14)

- (i) For children who had lived most of their lives between 6 and 12 km of the antennae at Radio Vaticana, the risk (OR) for leukaemia and lymphoma, adjusted for age, gender and distance from powerlines was significant, OR = 5.19; 95% CI = 1.54 – 17.54, while adjusting for age, gender, distance from powerlines and from the MariTele antennae was significant OR = 4.63, 95% CI = 1.28 – 16.78.
- (ii) For children who had lived most of their lives between 6 and 12 km of the antennae at Radio Vaticana and also within 6 km of the antennae at MariTele, the risk (OR) for leukaemia and lymphoma, adjusted for age, gender and distance from powerlines was significant, OR = 5.19; 95% CI = 1.54 – 17.54, while adjusting for age, gender and distance from powerlines was significant, OR = 3.85, 95% CI = 1.21 – 12.26.
- (iii) The risk was also evident in the sub-group of cases over one year of age.
- (iv) The risk was associated with the pathology for leukaemia and lymphoma.

Overall, the evidence suggests an excess risk of leukaemia and lymphoma in children in relation to proximity to both the Radio Vaticana and the MariTele transmitters.