

**Table S4: Clinical and demographic characterization of the 295 excluded cases**

| Variables description |                  | <i>n</i> | %     |
|-----------------------|------------------|----------|-------|
| Gender                | Male             | 227      | 76.9% |
|                       | Female           | 68       | 23.1% |
| Age                   | <65              | 195      | 66.1% |
|                       | ≥65 Years        | 100      | 33.9% |
| Consumptions          | Active           | 222      | 75.3% |
|                       | No               | 40       | 13.6% |
|                       | No data          | 33       | 11.2% |
| Tumour Local          | Oropharynx       | 127      | 43.1% |
|                       | Oral Cavity      | 168      | 56.9% |
| TNM stage             | I                | 107      | 36.3% |
|                       | II               | 90       | 30.5% |
|                       | III              | 79       | 26.8% |
|                       | IV               | 2        | 0.7%  |
|                       | No data          | 17       | 5.8%  |
| p16 marker            | p16 INK4a (-)    | 5        | 1.7%  |
|                       | p16 INK4a (+)    | 2        | 0.7%  |
|                       | No data          | 288      | 97.6% |
| HPV status            | HPV(-)           | 210      | 79.2% |
|                       | HPV(+)           | 85       | 28.8% |
| Treatment             | surgery          | 39       | 13.2% |
|                       | Radiation        | 29       | 9.8%  |
|                       | Combine Medicine | 212      | 71.9% |
|                       | No data          | 15       | 5.1%  |
| Treatment response    | Complete         | 195      | 66.1% |
|                       | Persistence      | 29       | 9.8%  |
|                       | Relapse          | 24       | 8.1%  |
|                       | no data          | 47       | 15.9% |