Electronic supplementary material 2

Decision-making about unruptured intracranial aneurysms: a survey of European neurosurgeons.

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### TABLE I. Case answers according to GDP tertile*

| Answer                                      | Low        | Intermediate | High       | Total |
|---------------------------------------------|------------|--------------|------------|-------|
| GDP per capita in 10,000 USD, mean (SD)     | 1.23 (0.52)| 3.71 (0.61) | 6.26 (1.62)| 346   |
| All respondents                             | 110 (100)  | 163 (100)    | 73 (100)   | 346   |
| Observation or no further follow-up         | 16 (15)    | 42 (26)      | 28 (38)    | 86    |
| Intervention (endovascular or surgical)     | 94 (85)    | 121 (74)     | 45 (62)    | 260   |

Abbreviations: GDP, Gross Domestic Product; SD, standard deviation.

* p value < 0.001 according to Chi squared test.

† Percentages within each tertile.
**TABLE II. Case answers according to geographical region***

| Answer | Northern | Western | Southern | Eastern | Other | Total |
|--------|----------|---------|----------|---------|-------|-------|
| GDP per capita of region in 10,000 USD, mean (±SD) | | | | | | |
| | 4.96 (1.39) | 4.98 (1.54) | 2.36 (0.76) | 1.09 (0.45) | 1.01 (0.20) | |
| All respondents | 60 (100) | 125 (100) | 94 (100) | 53 (100) | 19 | 351 |
| Observation or no further follow-up | 27 (45) | 35 (28) | 12 (13) | 9 (17) | 4 (21) | 87 |
| Intervention (endovascular or surgical) | 33 (55) | 90 (72) | 82 (87) | 44 (83) | 15 (79) | 264 |

Abbreviations: GDP, Gross Domestic Product; SD, standard deviation.

* p value < 0.001 according to Chi squared test.
† Percentages within each region.

Northern region: Iceland, Denmark, Estonia, Faroe Islands, Finland, Guernsey, Iceland, Ireland, Isle of Man, Jersey, Latvia, Lithuania, Norway, Sark, Svalbard and Jan Mayen, Sweden, United Kingdom

Western region: Austria, Belgium, France, Germany, Liechtenstein, Luxembourg, Monaco, Netherlands, Switzerland

Southern region: Albania, Andorra, Bosnia and Herzegovina, Croatia, Gibraltar, Greece, Italy, Macedonia, Malta, Montenegro, Portugal, San Marino, Serbia, Slovenia, Spain, Vatican City.

Eastern region: Belarus, Bulgaria, Czech Republic, Hungary, Poland, Moldova, Romania, Russia, Slovakia, Ukraine.

Turkey, Israel were grouped into Other
**TABLE III. Choice of diagnostic image modality according to GDP tertile**

| Image modality | Never/In special cases | Mainly/Always | Total | Chart ‡ |
|----------------|------------------------|---------------|-------|---------|
| **MRA**        |                        |               |       |         |
| GDP Tertile 1  | 90 (74)                | 32 (26)       | 122 (100) |        |
| GDP Tertile 2  | 103 (60)               | 69 (40)       | 172 (100) |        |
| GDP Tertile 3  | 28 (36)                | 50 (64)       | 78 (100) |        |
| **CTA**        |                        |               |       |         |
| GDP Tertile 1  | 31 (25)                | 91 (75)       | 122 (100) |        |
| GDP Tertile 2  | 75 (44)                | 97 (56)       | 172 (100) |        |
| GDP Tertile 3  | 22 (29)                | 55 (71)       | 77 (100) |        |
| **2D DSA**     |                        |               |       |         |
| GDP Tertile 1  | 65 (54)                | 57 (47)       | 122 (100) |        |
| GDP Tertile 2  | 93 (54)                | 79 (46)       | 172 (100) |        |
| GDP Tertile 3  | 46 (60)                | 31 (40)       | 77 (100) |        |
| **3D DSA**     |                        |               |       |         |
| GDP Tertile 1  | 69 (57)                | 53 (43)       | 122 (100) |        |
| GDP Tertile 2  | 32 (19)                | 140 (81)      | 172 (100) |        |
| GDP Tertile 3  | 29 (37)                | 49 (63)       | 78 (100) |        |

Abbreviations. 2D DSA, 2-dimensional digital subtraction angiography; 3D DSA, 3-dimensional digital subtraction angiography; CTA, computed tomography angiography; GDP, Gross Domestic Product; MRA, magnetic resonance angiography.

* GDP Tertile 1, 0-20,000 USD per capita; Tertile 2, 20,000-42,000 USD per capita; Tertile 3, >42,000 USD per capita.
† Percentages within each tertile.
‡ Charts over percentages. Blue indicates “never/in special cases”; red indicates “mainly/always”.
### TABLE IV. Choice of diagnostic image modality according to geographical region*

| Image modality | Frequency of use, no. (%)† | | |
|----------------|----------------------------|---|---|
|                | Never/In special cases     | Mainly/Always | Total | Chart ‡ |
| MRA            |                           |               |       |         |
| Northern       | 31 (52)                   | 29 (48)       | 60 (100) |           |
| Western        | 62 (46)                   | 73 (54)       | 135 (100) |           |
| Other          | 15 (63)                   | 9 (38)        | 24 (100) |           |
| Eastern        | 43 (75)                   | 14 (25)       | 57 (100) |           |
| Southern       | 74 (73)                   | 27 (27)       | 101 (100) |           |
| CTA            |                           |               |       |         |
| Northern       | 18 (31)                   | 41 (69)       | 59 (100) |           |
| Western        | 63 (47)                   | 72 (53)       | 135 (100) |           |
| Other          | 6 (25)                    | 18 (75)       | 24 (100) |           |
| Eastern        | 8 (14)                    | 49 (86)       | 57 (100) |           |
| Southern       | 35 (35)                   | 66 (65)       | 101 (100) |           |
| 2D DSA         |                           |               |       |         |
| Northern       | 32 (54)                   | 27 (46)       | 59 (100) |           |
| Western        | 77 (57)                   | 58 (43)       | 135 (100) |           |
| Other          | 9 (38)                    | 15 (63)       | 24 (100) |           |
| Eastern        | 36 (63)                   | 21 (37)       | 57 (100) |           |
| Southern       | 53 (52)                   | 48 (48)       | 101 (100) |           |
| 3D DSA         |                           |               |       |         |
| Northern       | 26 (43)                   | 34 (57)       | 60 (100) |           |
| Western        | 23 (17)                   | 112 (83)      | 135 (100) |           |
| Other          | 12 (50)                   | 12 (50)       | 24 (100) |           |
| Eastern        | 32 (56)                   | 25 (44)       | 57 (100) |           |
| Southern       | 39 (59)                   | 62 (61)       | 101 (100) |           |

Abbreviations: 2D DSA, 2-dimensional digital subtraction angiography; 3D DSA, 3-dimensional digital subtraction angiography; CTA, computed tomography angiography; GDP, Gross Domestic Product; MRA, magnetic resonance angiography.

* GDP Tertile 1, 0-20,000 USD per capita; Tertile 2, 20,000-42,000 USD per capita; Tertile 3, >42,000 USD per capita.
† Percentages within each region.
Charts over percentages. Blue indicates “never/in special cases”; red indicates “mainly/always”.

Northern region: Iceland, Denmark, Estonia, Faroe Islands, Finland, Guernsey, Iceland, Ireland, Isle of Man, Jersey, Latvia, Lithuania, Norway, Sark, Svalbard and Jan Mayen, Sweden, United Kingdom
Western region: Austria, Belgium, France, Germany, Liechtenstein, Luxembourg, Monaco, Netherlands, Switzerland
Southern region: Albania, Andorra, Bosnia and Herzegovina, Croatia, Gibraltar, Greece, Italy, Macedonia, Malta, Montenegro, Portugal, San Marino, Serbia, Slovenia, Spain, Vatican City.
Eastern region: Belarus, Bulgaria, Czech Republic, Hungary, Poland, Moldova, Romania, Russia, Slovakia, Ukraine.
Turkey, Israel were grouped into Other
TABLE V. No. of respondents within each category of treatment volume, according to geographical region

No. of aneurysms | Geographical area of Europe, no. (%)<sup>*</sup>
--- | --- | --- | --- | --- | --- | ---
| Northern | Western | Southern | Eastern | Other | Total |
Total | 6 (100) | 144 (100) | 116 (100) | 65 (100) | 30 (100) | 420 (100) |
< 12 | 6 (9) | 21 (15) | 38 (33) | 19 (29) | 13 (43) | 97 (23) |
12 - 24 | 22 (34) | 36 (25) | 39 (34) | 22 (34) | 10 (33) | 129 (31) |
25 - 60 | 16 (25) | 58 (40) | 28 (24) | 10 (15) | 6 (20) | 118 (28) |
61 - 120 | 15 (23) | 24 (17) | 9 (8) | 10 (15) | 1 (3) | 59 (14) |
> 120 | 6 (9) | 5 (3) | 2 (2) | 4 (6) | 0 (0) | 17 (4) |

<sup>*</sup> Percentages within each region.

Northern region: Iceland, Denmark, Estonia, Faroe Islands, Finland, Guernsey, Iceland, Ireland, Isle of Man, Jersey, Latvia, Lithuania, Norway, Sark, Svalbard and Jan Mayen, Sweden, United Kingdom
Western region: Austria, Belgium, France, Germany, Liechtenstein, Luxembourg, Monaco, Netherlands, Switzerland
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FIGURE I. Percentage of respondents within each category of treatment volume, according to geographical region