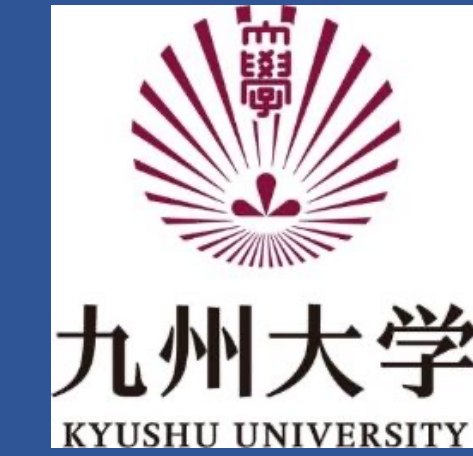


# Clinical features of Behçet's disease in Jordan

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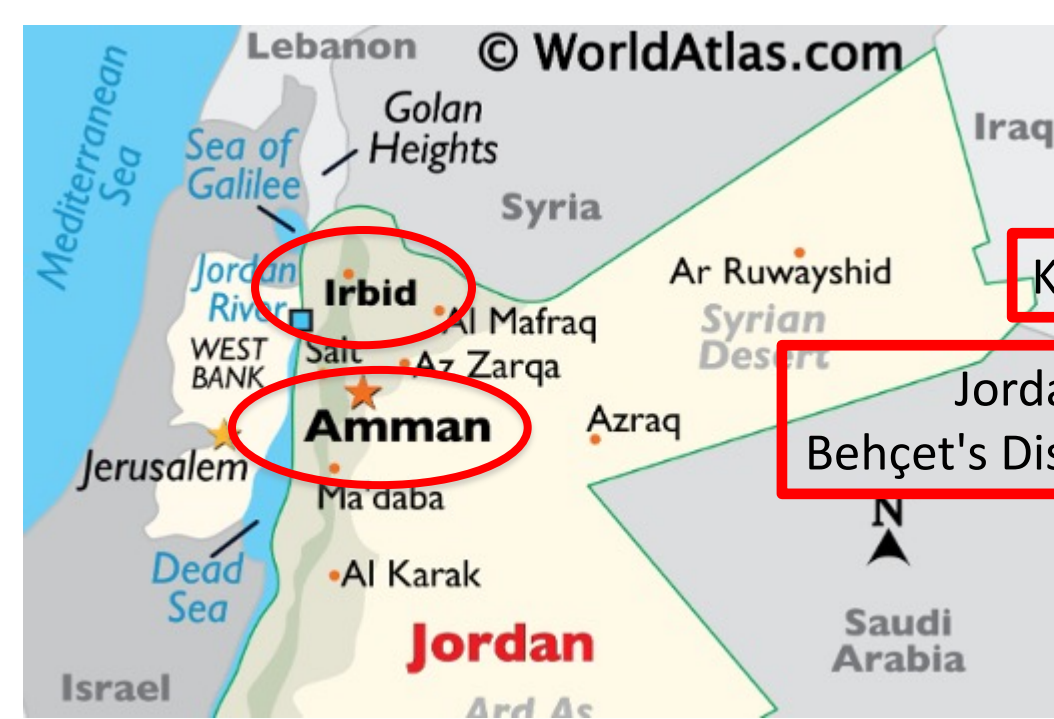
## Background & Purpose

Behçet's disease (BD) has a high prevalence in countries along the ancient Silk Road, and the number of healthy individuals carrying the disease susceptibility gene is also high in that region<sup>1, 2</sup>. In this study, we investigated the clinical features of BD and HLA-B51 gene frequencies in Jordan.

## Methods and Materials

Clinical presentation and treatment were examined retrospectively based on medical records. Saliva samples (2ml) were collected from the subjects and analyzed for HLA-B51-specific SNP (single nucleotide polymorphism) rs1050502 C allele frequency.

DNA collection kit, Oragene<sup>®</sup>, is a non-invasive sample collection method and it remains stable for 6 months at room temperature, reducing transportation and storage costs.



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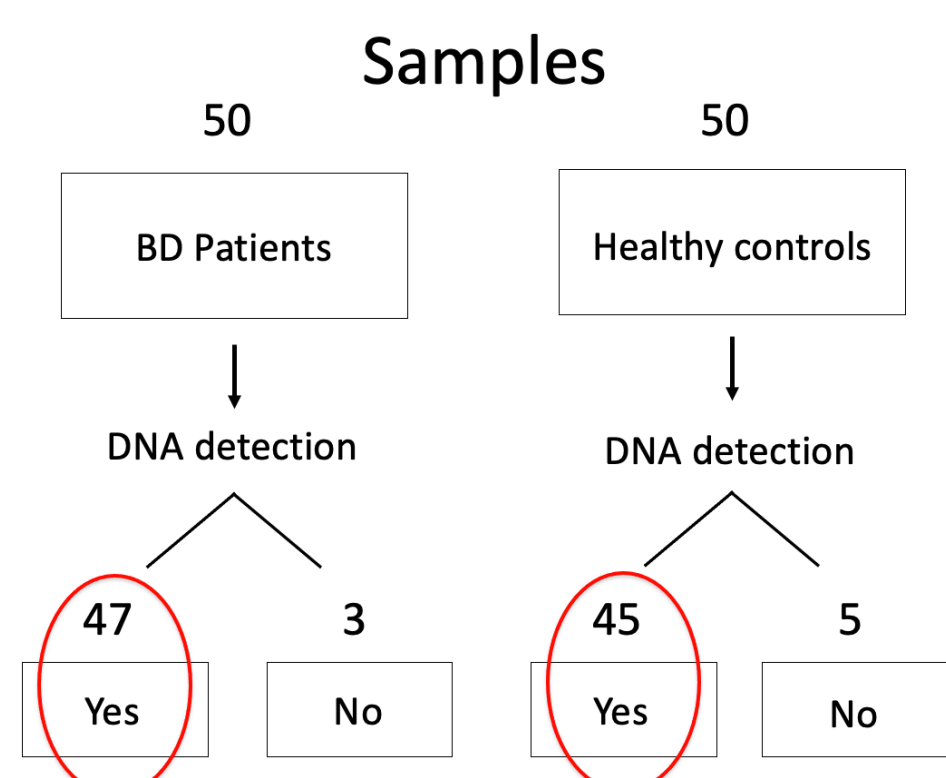
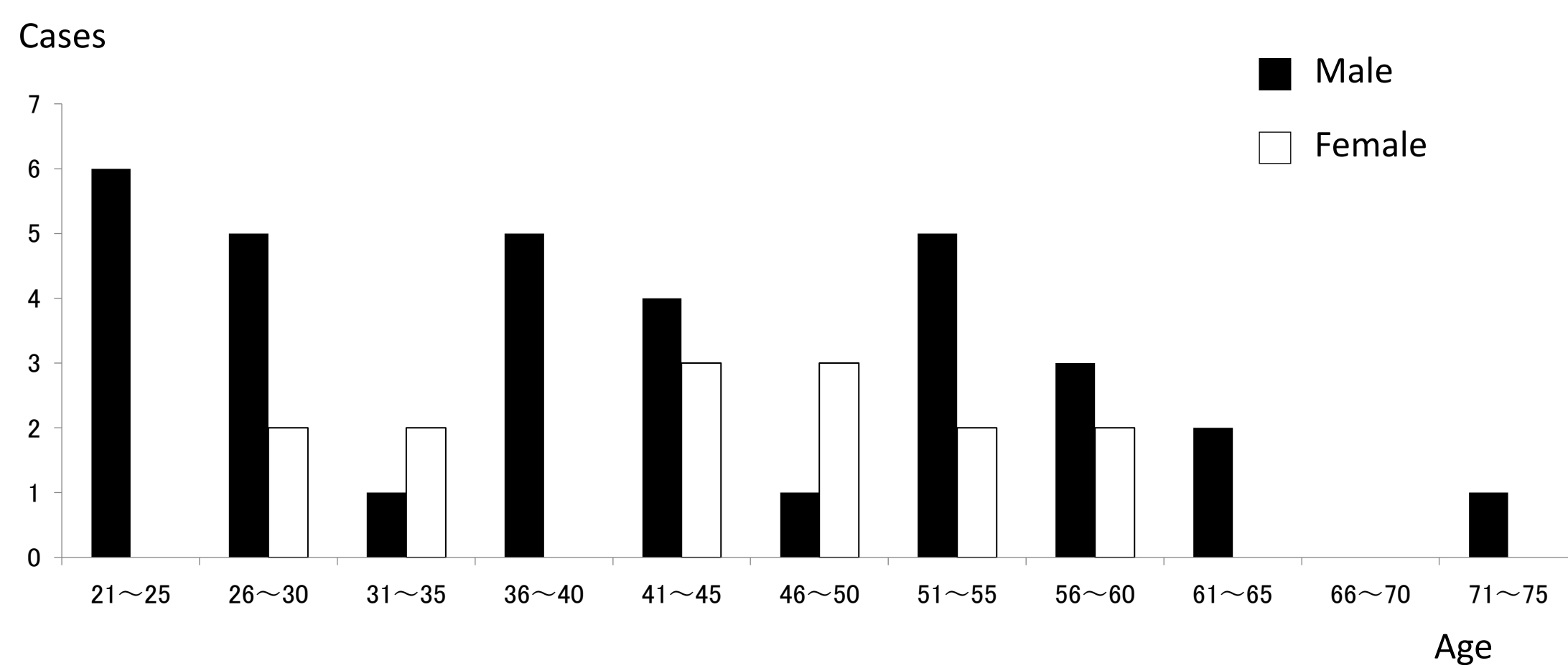


Table 1. Gender and age

	BD patients (n=47)	Healthy controls (n=45)
Male (M)	33	23
Female (F)	14	22
M to F ratio	2.36 : 1	1.05 : 1
Age (mean ± SD)	41.9 ± 12.8	33.8 ± 12.8
Male	40.8 ± 13.9	35.8 ± 13.4
Female	44.5 ± 10.2	31.8 ± 11.7

Figure 1. Gender and age distribution of BD patients in Jordan



## Results

Table 2. Clinical manifestation of BD patients in Jordan

	Male (%)	Female (%)	Total (%)
Oral aphthous ulcers	33/33 (100.0)	14/14 (100.0)	47/47 (100.0)
Skin lesions	28/31 (90.3)	12/14 (85.7)	40/45 (88.9)
Genital ulcer	27/32 (84.4)	11/13 (84.6)	38/45 (84.4)
Ocular lesions	21/31 (67.7)	11/14 (78.6)	32/45 (71.1)
Arthritis	6/32 (18.8)	2/13 (15.4)	8/45 (17.8)
Gastrointestinal lesions	2/30 (6.7)	2/13 (15.4)	4/43 (9.3)
Vascular lesions	16/29 (55.2)	2/10 (20.0)	18/39 (46.2)
Central nervous system involvement	10/30 (33.3)	3/14 (21.4)	13/44 (29.5)
Epididymitis	11/27 (40.7)	-	11/27 (40.7)

Table 3. Ocular findings and visual acuity of BD patients in Jordan

	Male (%)	Female (%)	Total (%)
Anterior uveitis only	1/31 (3.2)	1/14 (7.1)	2/45 (4.4)
Posterior uveitis only	1/31 (3.2)	1/14 (7.1)	2/45 (4.4)
Panuveitis	17/31 (54.8)	10/14 (71.4)	27/45 (60.0)
Best corrected visual acuity			
>20/200	25/26 (96.2)	9/10 (90.0)	34/36 (94.4)
<20/200	1/26 (3.8)	1/10 (10.0)	2/36 (5.6)

Table 4. Treatment of BD patients in Jordan

	Male (%)	Female (%)	Total (%)
Corticosteroid periocular injections	7/31 (22.6)	5/14 (35.7)	12/45 (26.7)
Systemic corticosteroids	32/33 (97.0)	11/14 (78.6)	43/47 (91.5)
Colchicine	28/31 (90.3)	12/14 (85.7)	40/45 (88.9)
Immunosuppressants	28/33 (84.8)	11/14 (78.6)	39/47 (83.0)
Azathioprine	24/28 (85.7)	11 (100.0)	35/39 (89.7)
TNF (tumor necrosis factor) inhibitors	9/29 (31.0)	2/8 (25.0)	11/37 (29.7)
Infliximab	9/9 (100.0)	1/2 (50.0)	10/11 (90.9)

Table 5. HLA-B51

	BD patients	Healthy controls	p value
HLA-B51 prevalence	70.2%	15.6%	*p < 0.01
rs1050502 C allele frequency	39.4%	7.8%	*p < 0.01

## Discussion

Table 6. Summary of clinical features of BD disease on regional basis

Countries (no. of subjects)	Russia <sup>3</sup> (250)	Japan <sup>4</sup> (3044)	Korea <sup>5</sup> (1527)	China <sup>6</sup> (334)	Brazil <sup>7</sup> (87)	Mongolia <sup>8</sup> (65)	Jordan (47)
Male-to-female ratio	2.4 : 1	1 : 1.06	1 : 1.75	1.4 : 1	1 : 1.18	1 : 1.95	2.4 : 1
Age (mean ± SD)	31.5 ± 9.4	38.0	36.0 ± 12.8	35.8 ± 11.1	28.0 ± 7.6	37.7 ± 11.8	41.9 ± 12.8
Oral aphthous ulcers	100	98.0	98.8	97.6	100	100	100
Skin lesions	88.8	84.4	84.3	63.2	47.7	81.5	88.9
Genital ulcer	81.2	66.9	83.2	75.2	77.0	89.2	84.4
Ocular lesions	54.0	41.1	50.9	26.1	80.5	63.1	71.1
Arthritis	53.2	49.4	38.4	28.4	13.8	86.2	17.8
Gastrointestinal lesions	25.2	27.9	7.3	16.8	1.1	-	9.3
Vascular lesions	25.2	11.4	1.8	17.4	14.0	4.5	46.2
Central nervous system (CNS) involvement	8.0	25.5	4.6	9.6	31.0	0	29.5
Epididymitis	14.1	8.0	0.6	-	-	13.6	40.7

Table 7. HLA-B51 Frequency (%)

Countries	BD patients	Healthy controls	Countries	BD patients	Healthy controls
Japan (1999)	58.9	13.8	Turkey (2001)	75.0	24.7
Korea (2002)	35.2	22.5	Italy (2001)	57.4	19.2
Iran (2002)	61.9	28.7	Spain (1999)	36.2	19.6
Jordan (2001)	63.2	16.0	Greece (1999)	78.9	22.5
Saudi Arabia (1999)	76.9	22.2	Jordan (2024)	70.2	15.6

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- The male-to-female ratio of our study was the highest same as Russia, and the mean age of our study was the oldest compared to other countries.
- The top three frequent manifestations of BD patients were consistent in Russia, Japan, and Korea. Arthritis was as low as in Brazil, but the percentage of vascular lesions, CNS involvement, and epididymitis were high.
- The frequency of HLA-B51 of our study was the same as in the previous study in Jordan and as high as in Saudi Arabia, Turkey, and Greece.
- Tekeuchi M et al<sup>9</sup> reported that the most significantly associated SNP was rs1050502, a tag SNP for HLA-B\*51, in 1,900 Turkish BD cases consistent in our study.

## Conclusion

The clinical features of Behçet's disease in Jordan were similar to those in Japan and other Silk Road countries, with many HLA-B51 carriers.

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