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HLA-A, B, Cw, DRB1, DRB3/4/5, DQB1 in German patients suffering from rapidly progressive periodontitis (RPP) and adult periodontitis (AP)

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Abstract

Background/Aim: There is growing indication that differences in host response determine susceptibility and resistance to periodontal disease. Particularly, the effect of histocompatibility antigens (HLA) on early onset periodontitis (EOP) has been studied. As most of the results are not conclusive and to date no report has been done on German patients, the aim of this study was to investigate the distribution of HLA alleles in a group of 50 German RPP patients and 102 German AP patients and to compare them to 102 control probands without periodontitis.

Methods: Diagnosis was established according to standardised clinical criteria. HLA typing was performed using serologic and molecular biologic (PCR-SSP) techniques.

Results: Compared to the controls, RPP patients had a significantly higher frequency of HLA-DRB1*13 and a significantly lower frequency of HLA-DRBblank-*(non-DRB3/4/5). AP patients showed a significantly increased occurrence of HLA-B*14 and -Cw*08 as well as a significantly decreased frequency of HLA-A*03. In both patient groups HLA-A*11 and -A*29 had an increased frequency and HLA-A*31 and -A*30/31 were decreased. These differences were statistical significant in the whole patient group (RPP + AP).

Conclusions: Based on modern DNA techniques the present study shows an association of HLA to both RPP and AP. Certain HLA alleles seem to be associated with susceptibility or resistance to periodontitis in general. However, before this knowledge can be used for differential diagnosis or prognosis, further investigations are necessary.

Key words: AP; HLA; individual risk; MHC; periodontitis; RPP; susceptibility

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It is generally accepted that all forms of periodontitis are initiated by bacterial infections. However, the mechanisms for determining the individual disposition (mild or severe form) of the disease have not yet been elucidated. Predictable knowledge of individual differences in disease progression is necessary for a more individualised therapy. For example, in most cases the mild and moderate forms of periodontitis can be treated successfully by scaling and root planing alone, whereas in the cases of refractory or early onset forms, more extensive therapy such as local or systemic antibiotics and/or flap surgery is often required.

Several but not all patients with se-

vere or early onset periodontitis are known to have a decreased immune defence with a lowered local (Siegusch 1998), peripheral cellular or humoral immune defence (Kimura et al. 1992)and, in cases with a reinforced release of prostaglandin-E_2 (Garrison et al. 1989), interleukin 1β (Hernichel-Gorbach et al. 1994, Kornman et al. 1997, Engebretson et al. 1999) or tumor necrosis factor-α (Salvi et al. 1997, Galbraith et al. 1998).

Several studies give evidence that genetic factors may be important for susceptibility to severe or early onset periodontitis (Beaty et al. 1987, Long et al. 1987, Melvin et al. 1991, Boughman et al. 1992, Marazita et al. 1994, Hart 1996, Kornman et al. 1997, McGuire & Nunn 1999). With particular regard to these factors, an association of certain HLA markers (Table 1) was demonstrated in cases of juvenile, rapidly progressive and adult periodontitis in English, French, Jewish (Israeli), Turkish and Japanese groups. The most striking deviations were shown for HLA-A24(9) and HLA-DR4. In addition, resistance to periodontitis was shown to be associated with HLA-A10 (i.e. 25 + 26 +), HLA-A2 and HLA-A1.

Due to bacterial mimicry with HLA (Ebringer 1983, Hirata & Terasaki 1970) and HLA-dependent antibacterial immunity (Buckley et al. 1973, Greenberg et al. 1975) a relation to certain bacteria associated with JP, RPP or AP can be assumed. To date, only one study of German patients suffering from profound periodontitis exists, in which only serologic HLA typing was used (Marggraf et al. 1983).The aim of the present study therefore was to investigate further German groups with RPP and AP using modern molecular genetic techniques.

Material and Methods

Study population

In the present study a group of 50 unrelated German Caucasian patients with RPP and a group of 102 unrelated German Caucasian patients with adult periodontitis are compared with a group of 102 unrelated German Caucasian individuals free of periodontitis (controls). The measurements for the probing depth and attachment loss were taken at six sites of each tooth for all patients and controls. Moreover, as a group expressing normal HLA frequencies, 157 German Caucasian blood donors were included in the study. This group was not examined for periodontal diseases.

Diagnosis of RPP was established according to standardised minimal clinical criteria for Generalised Early Onset Periodontitis (G-EOP) according to Tonetti & Mombelli (1998):

Table 1. Results of previous studies concerning associations of HLA alleles/antigens with various forms of periodontitis. The arrows show whether a marker was found more (↑) or less (↓) frequent among patients

Authors	Year	Population	Diagnosis (*N*)	Typing method	Associated HLA markers
Terasaki et al.	1975	Caucasian (USA)	JP 19 AP (28)	CDC	A2 (↓) A2 (↓)
Reinholdt et al.	1977	Caucasian (Danish)	JP (39) AP (29)	CDC	A9 (↑), A28 (↑), B15 (↑) no association
Kaslick et al.	1975	Caucasian (USA)	JP (33) AP (41)	CDC	A2 (↓) A2 (↓)
Marggraf et al.	1983	Caucasian (German)	Profound periodontitis (50)	CDC	A9 (↑), A23 (↑), A24 (↑), B35 (↑), Cw4 (↑)
Goteiner & Goldman	1984	Caucasian + Negroid (English)	AP 25	CDC	B5 (↓), A28 (↓)
Klouda et al.	1986	Caucasian (English)	RPP (44)	CDC	A9 (↑), A24 (↑)
Katz et al.	1987	Jewish (Israeli)	RPP 10	CDC	DR4 (↑)
Amer et al.	1988	Caucasian (English)	RPP (49)	CDC	A9 (↑), A10 (↓)
Alley et al.	1993	Caucasian (USA)	AP (30)	CDC	DR4 (↑), DR53 (↑), DQ3 (↑)
Shapira et al.	1994	Jewish (Non-Ashkenazi, African)	LJP 11 Severe periodontitis (15)	CDC	A9 (↑), B15 (↑) A9 (↑), B15 (↑)
Takashiba et al.	1994	Japanese	EOP + AP (70)	CDC	no association
Moses et al.	1994	Negroid (Afro-Caribbean)	JP (38)	CDC	A1 (↑), B22 (↑), DR7 (↑), A68 (↓), B5 (↓), DR2 (↓)
Firatli et al.	1996	Turkish	JP (30) RPP (30)	CDC	A24 (↑), DR4 (↑), A1 (↓), A2 (↓) A9 (↑), DR4 (↑), A1 (↓), A2 (↓)
Ohyama et al.	1996	Japanese	EOP (24)	PCR-RFLP	1*1401,*1501 (↑), DQB1*0503, *0602 (↑), DRB1*0405,*0401 (↓)
Dyer et al.	1997	Caucasian (USA)	AP (30)	CDC	DR4 (↑), DR53 (↑), DQ3 (↑)
Bonfil et al.	1999	Mixed (French)	RPP 12	PCR-SS0	DRB1*0401,*0404,*0405,*0408 (↑)

CDC: Complement Depending Cytotoxicity; RFLP: restriction fragment length polymorphism; SSP: sequence-specific primer; SSO: sequence-specific oligonucleotide; PCR: polymerase chain reaction.

- onset age of periodontitis before 35 years of age
- at least eight teeth with attachment loss ≥4 mm
- at least three affected teeth other than molars or incisors
- vertical and horizontal bone loss in the affected sites detectable on X-rays
- bleeding on probing
- little accumulation of mineralised plaque in comparison to AP
- increased mobility of certain teeth
- rapid course.

The diagnosis of AP was established by the following criteria:

- age of onset over 35 years of age
- at least five teeth with attachment loss ≥4 mm
- detectable alveolar bone loss in the X-rays
- bleeding when probed
- often high accumulation of mineralised plaque
- increased mobility of certain teeth
- slow course.

The control probands without periodontitis were older than 38 years of age and did not present any pathological attachment loss (probing depth <3.5 mm, no gingival recession due to periodontitis) and no alveolar bone loss evident in X-rays. We deliberately selected controls with a lack of adequate oral hygiene with an approximal plaque index (API) >30%.

All patients and controls were free from general diseases with known associations to HLA markers.

Serologic HLA typing

Anticoagulated 20 mL blood samples were taken from all patients and controls. Lymphocytes were separated as indicator cells from peripheral blood by density gradient centrifugation (Böyum 1968). All probands were typed for HLA-A, -B, -Cw antigens (Lymphotype 144, Biotest, Dreieich, Germany) by standard NIH (National Institute of Health) microlymphocytotoxicity test following the manufacturer's instructions.

Genomic HLA typing

DNA was prepared from blood leukocytes by using the salting out method (Miller et al. 1988). All patients and controls were DNA typed using the standard PCR-SSP (Perkin Elmer, PE 9600, Weiterstadt, Germany) for HLA-A, -B, -Cw (Deutsche Dynal, Hamburg, Germany); for HLA-DRB1, -DRB3/4/5, -DQB1 alleles, a low resolution technique was used (BAG, Lich, Germany) according to the protocol provided by the manufacturer.

Quality control

HLA-typing quality was demonstrated by typing control samples from INSTAND (Institute for Standardisation and Demonstration in Medical Laboratories e.V., Düsseldorf, Germany) and International DNA Exchange, ULCA Tissue Typing DNA Laboratory (Los Angeles, CA, USA).

Statistical analysis

HLA phenotype frequencies (pf) in all groups were determined by counting the probands positive for a certain HLA antigen (n) and were represented as the percentage of the total number of probands in one group (N). Statistical analysis was based on a 2×2 contingency table and performed by χ^2 testing with Yates' continuity correction. If there were less than five patients positive for a HLA allele within one group, Fisher's Exact Test was performed. If no specific hypothesis was tested, p-values were corrected (p_c) by multiplication with the number of alleles in

Table 2. Differences of HLA phenotype frequencies between RPP patients and controls with healthy periodontium. The arrows show the higher (↑) or lower (↓) frequency within one group compared with the normal distribution

	RPP ($N=50$)		Controls ($N=102$)		Chi²	P_c
	n	pf (%)	n	pf (%)		
A*02	19	38.00↓	52	50.98	2.271	>0.05
A*11	6	12.00↑	6	5.88↓	1.727	>0.05
A*29	**4**	**8.00↑**	**1**	**0.98↓**	**5.197**	**0.040**
A*31	**0**	**0.00↓**	**9**	**8.82↑**	**4.689**	**0.024**
A*30/31	**0**	**0.00↓**	**12**	**11.76↑**	**6.387**	**0.007**
A*68/69	11	22.00↑	10	9.80	4.191	>0.05
B*51	3	6.00↓	12	11.76	1.254	>0.05
B*44	15	30.00↑	18	17.65	3.012	>0.05
B*18	7	14.00↑	7	6.86	2.044	>0.05
DRB1*16	3	6.00↑	1	0.98↓	3.299	>0.05
DRB1*13	**18**	**36.00↑**	**21**	**20.59↓**	**4.178**	**0.046**
DRB1*07	18	36.00↑	24	23.53↓	2.609	>0.05
DRBblank*	**9**	**18.00↓**	**35**	**34.31↑**	**4.342**	**0.036**
DQB1*0302	4	8.00↓	20	19.61↑	3.400	>0.05
DQB1*04	2	4.00↓	9	8.82	1.163	>0.05

pf, frequency of HLA phenotype; p_C, p corrected (Yates or Fisher).

Table 3. Differences of HLA phenotype frequencies between AP patients and controls with healthy periodontium. The arrows show the higher (↑) or lower (↓) frequency within one group compared with the normal distribution

	AP ($N=102$)		Controls ($N=102$)		Chi²	P_c
	n	pf (%)	n	pf (%)		
A*03	**20**	**19.61↓**	**33**	**32.35↑**	**4.308**	**0.039**
A*11	**15**	**14.71↑**	**6**	**5.88↓**	**4.300**	**0.041**
A*29	**7**	**6.86**	**1**	**0.98↓**	**4.684**	**0.032**
A*31	4	3.92	9	8.82↑	2.054	>0.05
A*30/31	6	5.88↓	12	11.76↑	2.194	>0.05
B*14	**6**	**5.88**	**0**	**0.00↓**	**6.182**	**0.014**
B*51	8	7.84↓	12	11.76	0.887	>0.05
B*18	12	11.76↑	7	6.86	1.451	>0.05
Cw*08	**6**	**5.88**	**0**	**0.00↓**	**6.182**	**0.014**
DQB1*04	4	3.92↓	9	8.82	2.054	>0.05

pf, frequency of HLA phenotype; p_C, p corrected (Yates or Fisher).

comparison with each locus (HLA-A: 14; HLA-B: 28; HLA-Cw: 9; HLA-DRB1: 13; HLA-DRB3/4/5: 4; HLA-DQB1: 7) according to Bonferroni's correction. A p-value <0.05 was considered significant.

Results

Distribution of HLA alleles among patients with RPP

Comparing the frequencies for all HLA-class I and class II alleles among patients with RPP and healthy controls, higher frequencies of the HLA alleles A*11, A*29, A*68/69 (A28), B*44, B*18, DRB1*16, DRB1*13 and DRB1*07 were found, as well as decreased frequencies of A*02, A*31, A*30/31, B*51, DRBblank* (none of the supertypes DRB3*/DRB4*/DRB5*), DQB1*0302 and DQB1*04. Using Yates' correction or Fisher's exact test, respectively, the positive association of HLA-A*29 and HLA-DRB1*13 and the negative association of HLA-A*31, HLA-A*30/31 and HLA-DRBblank* reached statistical significance.

Taking the normal distribution of HLA alleles from the blood donors, all these deviations of HLA frequencies were mainly caused by deviations within the RPP group (Table 2).

Distribution of HLA alleles among patients with AP

In the group of patients with adult periodontitis there were increased frequencies of the HLA alleles A*11, A*29, B*14, B*18 and Cw*08, as well as decreased frequencies of A*03, A*31, A*30/31, B*51 and DQB1*04 in comparison with the controls. The positive associations of HLA-A*11, -A*29, -B*14 and -Cw*08 and the negative association of HLA-A*03 were statistically significant (Yates/Fisher).

With regard to the normal distribution, the deviations of HLA-A*29, -A*31, -B*14 and -Cw*08 were caused by the deviation of the controls without any periodontitis. All other differences were caused by deviations of both AP patients and controls (Table 3).

Distribution of HLA alleles among all patients (AP + RPP)

Some of the positively or negatively associated HLA alleles among patients with RPP or AP could be found in both patient groups, others only in RPP or AP patients, respectively. There was a significantly positive association for HLA-A*11 and -A*29 when patients were grouped together, as well as a significantly negative association for HLA-A*31 and -A*30/31. The increased frequency of HLA-B*18 and the decreased frequencies of HLA-B*51 and DQB1*04 could also be found in both patient groups. The differences in the frequencies of these alleles was striking among all patients (RPP + AP), but none was statistically significant (Table 4).

When taking all the significant results into account, there was an association for HLA-DRB1*13 and -DRBblank* only among RPP patients and an association for HLA-A*03, -B*14 and Cw*08 only among AP patients, whereas HLA-A*11, -A*29, -A*31 and A*30/31 were associated with both periodontitis groups (Fig. 1).

Table 4. Differences of HLA phenotype frequencies between periodontitis patients (RPP + AP) and controls with healthy periodontum compared with the normal distribution

	RPP + AP ($N = 152$)		Controls ($N = 102$)		Chi^2	P_c
	n	pf (%)	*n*	pf (%)		
A*11	**21**	**13.82↑**	**6**	**5.88↓**	**4.044**	**0.044**
A*29	**11**	**7.24↑**	**1**	**0.98↓**	**5.308**	**0.021**
A*31	**4**	**2.63↓**	**9**	**8.82↑**	**4.819**	**0.028**
A*30/31	**6**	**3.95↓**	**12**	**11.76↑**	**5.665**	**0.017**
B*51	11	7.24↓	12	11.76	1.520	>0.05
B*18	19	12.50↑	7	6.86	2.111	>0.05
DQB1*04	6	3.95↓	9	8.82	2.621	>0.05

pf, frequency of HLA phenotype; p_C, p corrected (Yates or Fisher).

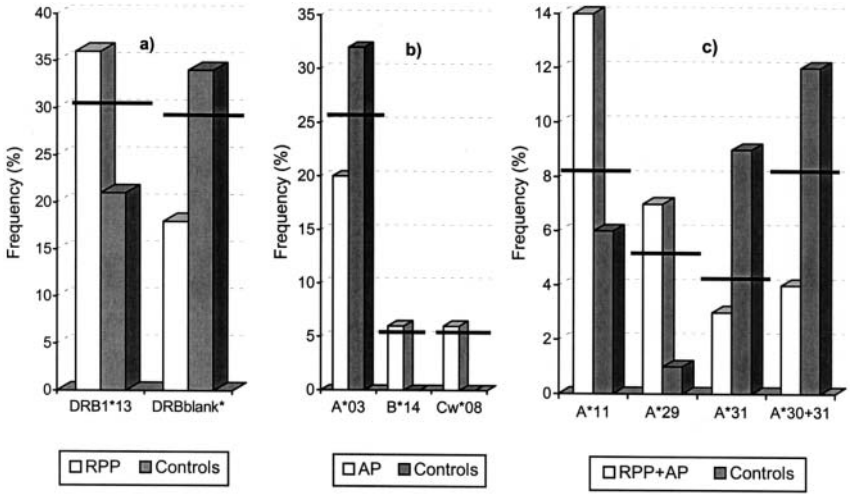

Fig. 1. Significant deviations of HLA phenotype frequencies of 152 patients with periodontitis compared to 102 healthy, periodontitis-free controls: *(a)* deviations among 50 RPP patients; *(b)* deviations among 102 AP patients; *(c)* deviations among all 152 periodontitis (RPP + AP) patients. The frequency of the HLA phenotypes within the normal population is marked with a crossbar ().

Discussion

Contrary to most other studies on associations between HLA and periodontitis, in the present study both groups of RPP and AP patients were compared with 102 control probands free of periodontitis, but not with blood donors as a control group. The reason behind this was that blood donors are usually not examined for periodontal diseases. RPP is the most frequent early onset form of periodontitis, with a prevalence of 2–3% among Caucasians. Genetic aspects are considered to influence the susceptibility to the disease; clinical symptoms are characteristic and allow a fairly exact definition of this patient group. Due to the selection of control probands with healthy periodontium as a reference group, a better con-

trast between patients and controls could be achieved. The minimum age of the control probands was restricted to 38 years, excluding the possibility that a RPP could develop at a later time. Nevertheless, adult periodontitis could still appear at 38 years of age or later. The HLA frequencies of the blood donors corresponded to normal distributions which have already been published (Gjertson et al. 1998). This group was not examined for periodontal diseases. However, a direct comparison between blood donors and both patient groups to determine a risk factor for periodontitis was not meaningful as blood donors represent an inhomogeneous group of probands, some of whom cannot be considered to have a healthy periodontum. This group was used to estimate the tendency of the HLA deviations between the groups of patients and the resistant control probands.

There were significant deviations in the frequencies of certain HLA markers among patients with RPP, as well as patients with AP (Fig. 1a,b) in spite of the fact that at the end, a strict differentiation between periodontally healthy controls and AP is impossible. Moreover, some HLA alleles were important for both patient groups (Fig. 1c).

The increased frequency of the HLA-DRB1*13 in the RPP group may be associated with a higher risk for disease, whereas the decreased frequency of DRBblank* (none of the supertypes DRB3*/DRB4*/DRB5*) could indicate a lower risk for the development of a RPP. This suggestion is supported by the fact that these HLA deviations could be found not only in comparison with the periodontitis-free controls but also with the normal population. HLA-A*03 could be considered to be a resistance factor for AP as HLA-A*03 occurred in AP patients with a significantly lower frequency than either the periodontitis-free controls or the normal population. Conversely, the significantly positive associations of HLA-B*14 and HLA-Cw*08 were only a consequence of decreased frequencies (pf = 0%!) among the periodontitis free ('resistant') controls, whereas the AP group did not show any deviation from the normal population of blood donors. As these HLA markers are lower in the group of periodontitis-free controls, they cannot be considered susceptibility factors (low immune reactivity) for AP (Table 3), but they could be associated with low resistance to periodontitis. The significantly increased frequencies of HLA-A*11 and HLA-A*29 and the significantly decreased frequencies of HLA-A*31, as well as HLA-A*30/31 within the whole periodontitis (RPP + AP) group (Table 4) could be an indication of the existence of susceptibility or resistance factors to periodontitis in general. In both RPP and AP groups these HLA alleles showed similar deviations.

The slightly decreased frequency of HLA-A*02 found in our patients with RPP corresponds with findings from one Turkish RPP group (Firatli et al. 1996) and in periodontitis patients with the other diagnosis, JP/AP (Terasaki et al. 1975, Kaslick et al. 1975). However, the non-significant positive associations of HLA-A*68/69 (A28) and -DRB1*07 in our patients with RPP were not found for RPP in other studies, although there have been reports of increased HLA-A28 in a Danish Caucasian JP group and of increased HLA-DR7 in an Afro-Caribbean JP group (Table 1). The non-significant lower frequency of HLA-B*51 (B5) in both patient groups (Tables 2–4) may be supported by the findings in two previous studies of AP and JP patients of both Caucasian and Negroid origin (Table 1). Known positive HLA associations with periodontitis such as HLA-A*23/24 (A9), -B*15 or -DRB1*04 could not be confirmed. In the present study there was rather a tendency for a lower frequency of HLA-A*23/24 (A9) and -DRB1*04 (DR4) in patients with RPP. Ohyama et al. (1996) also reported a decrease in frequency of the HLA-DR4 alleles DRB1*0401 and DRB1*0405 in 24 patients with EOP. However, Klouda et al. (1986) did not find any associations between RPP and HLA-DR. In the present study the HLA alleles A*31, A*30/31, A*03 and DRBblank* (none of the supertypes DRB3*/DRB4*/DRB5*) could be defined as resistant factors for RPP (DRBblank*), AP (A*03) or both groups (A*31, A*30/31). However, HLA-A10 and -A1 described by Amer et al. (1988) and Firatli et al. (1996) as resistant factors for RPP did not show any deviations in all patient groups. To date, the observed significantly positive and negative associations of several HLA markers in both patient groups have not yet been reported. However, as in all previous reports, all HLA deviations remained insignificant after using Bonferroni's correction. Differences within the results of previous investigations could be explained in several ways. In most previous studies a serologic technique was used with the help of which certain HLA class II alleles were not or only insufficiently typeable. There were even older studies without any HLA-DR,DQ typing results. Furthermore, the inconsistent findings could be caused by the study of infrequent alleles in too small groups of patients ($n < 50$) or could be explained by various determinations of periodontitis and by different geographical/ethnological origins (Jewish, Turkish, Japanese, British, Afro-Caribbean) of the investigated patient groups compared to the patient groups of the present report. Moreover, if in some other studies (for example Marggraf et al. 1983 or Katz et al. 1987) probands were used as a control group without any periodontal examination, some of the deviations may consequently not have been revealed. The inconsistent findings among studies concerning HLA association to several forms of periodontitis could also indicate that several HLA markers could be in linkage disequilibrium with an unidentified causative factor for periodontitis. Therefore, it would be helpful to investigate possible associations of the HLA system to proven genetical susceptibility factors for periodontitis such as interleukin-1 polymorphism characterized by the IL-1alpha −889 (+4845) and IL-1beta (+3954) markers (Kornman et al. 1999, Garisson & Nichols 1989) as well as TNF-alpha polymorphism (Galbraith et al. 1998). On the other hand, Takashiba et al. (1999) reported that patients expressing the HLA-DRB1*1501-DQB1*0602 genotype may have an accelerated T-cell response to *P. gingivalis* and thus increased susceptibility to EOP, i.e. the different allotypes of the HLA marker could directly affect the capability to bind certain bacterial antigens or indirectly have an influence on other immune mechanisms.

The present results suggest that the major histocompatibility complex (MHC) may be one of the factors that play a role in the background of RPP, AP or periodontitis in general. As no strong association has been shown, there may be other, more important genetic factors as the real etiologic factors. That means that the HLA system itself or closely linked genes could influence, but not completely determine, susceptibility or resistance to peri-

odontitis. Due to the absence of prognostic studies on HLA associations with JP, RPP or AP at present, the diagnostic importance of HLA markers cannot be estimated finally. Nevertheless, the results could become important for a differential diagnosis of aggressive or milder forms of periodontal diseases.

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Zusammenfassung

HLA-A, B, Cw, DRB1, DRB3/4/5, DQB1 bei deutschen Patienten, die an rasch fortschreitender Parodontitis (RPP) und Erwachsenenparodontitis leiden

Grundlagen/Ziel: Es gibt immer mehr Hinweise, dass Unterschiede in der Wirtsabwehr die Anfälligkeit und Resistenz bezüglich Parodontitis bestimmen. Insbesondere die Wirkung der Histokompatibilitätsantigene (HLA) wurde bei Patienten mit früh beginnender Parodontitis (EOP) untersucht. Da die meisten Ergebnisse nicht schlüssig sind und bis heute kein Bericht zu deutschen Patienten existiert, war es das Ziel dieser Studie die Verteilung der HLA-Allele in einer Gruppe von 50 RPP-Patienten und 102 AP-Patienten zu untersuchen und sie mit 102 Kontrollprobanden ohne Parodontitis zu vergleichen

Methoden: Die Diagnose wurde entsprechend standardisierter klinischer Kriterien durchgeführt. Die HLA-Typisierung erfolgte mittels serologischer und molekularbiologischer (PCR-SSP) Techniken.

Ergebnisse: Im Vergleich zu den Kontrollen hatten die RPP-Patienten eine signifikant höhere Häufigkeit von HLA-DRB1*13 und eine signifikant niedrigere Häufigkeit von HLA-DRBblank*(non-DRB3/4/5). Die AP-Patienten zeigten sowohl ein signifikant erhöhtes Vorkommen von HLA-B*14 und -Cw*08 als auch eine signifikant niedrigere Häufigkeit von HLA-A*03. Bei beiden Patientengruppen hatten HLA-A*11 und -A*29 eine erhöhte Häufigkeit und HLA-A*31 sowie -A*30/31 waren reduziert.
In der Gesamtpatientengruppe (RPP + AP) waren diese Unterschied statistisch signifikant.

Schlussfolgerungen: Auf der Grundlage von modernen DNA-Techniken zeigt die vorliegende Studie eine Assoziation von HLA zu RPP als auch AP. Bestimmte HLA-Allele scheinen allgemein mit einer die Anfälligkeit oder Resistenz bezüglich Parodontitis assoziiert zu sein. Jedoch sind, bevor dieses Wissen für die Differentialdiagnose oder Prognose verwendet werden kann, weitere Untersuchungen nötig.

Résumé

Objectif: Il y a de plus en plus d'indications impliquant les différences de réponse de l'hôte dans la détermination de la susceptibilité et de la résistance à la maladie parodontale.En particulier, les effets des antigènes d'histocompatibilité (HLA) sur la parodontite d'apparition précoce (EOP) ont été étudié . Comme la plupart des résultats n'apportent pas de réponses concluantes, et puisqu'aucune étude à ce jour n'a concerné les patients allemands, l'objectif de cette étude fut de rechercher la distribution des allèles HLA dans un groupe de 50 patients allemands atteint de parodontite à progression rapide (RPP) et un groupe de 102 patients allemands atteint de parodontite de l'adulte (AP), et de les comparer avec 102 témoins contrôles indèmnes de parodontite.

Methodes: Le diagnostic a été établi selon des critères cliniques standardisés. Le typage HLA a été réalisé à l'aide de techniques sérologiques et de biologies moléculaires (PCR-SSP).

Resultats: Comparés aux contrôles, les patients atteints de parodontite à progression rapide avaient une fréquence significativement plus importante de HLA-DRB1*13 et une fréquence significativement plus basse de HLA-DRBblank*(non-DRB3/4/5). Les patients atteint de parodontite de l'adulte présentaient une augmentation significative de HLA-B*14 et -Cw*08 ainsi qu'une fréquence significativement réduite de HLA-A*03. Dans les deux groupes de patients, HLA-A*11 et -A*29 avaient une fréquence augmentée alors que HLA-A*31 et -A*30/31 étaient diminués. Ces différences étaient statistiquement significatives pour le groupe de patient dans sa globalité (RPP et AP).

Conclusions: Réalisé avec des techniques ADN modernes, cette étude montre une association entre HLA et RPP et AP. Certaines allèles HLA semblent être associées avec la susceptibilité ou la résistance à la parodontite en général. Cependant, avant que cette donnée puisse être utilisée pour déterminer le diagnostic différentiel ou le pronostic, d'autres recherches supplémentaires seront nécessaires.

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